

AUSTRALIAN MINING PROGRESS—MINERAL STATISTICS OF VICTORIA.

We have been favoured by Mr. C. W. LANGTREE, Acting Secretary for Mines and Water Supply, with the Victorian Mineral Statistics for 1883, which have just been issued. He reports that the officers of the Department, mineowners, mine managers, managers of banks, and others interested in mining pursuits have continued to render valuable assistance and information in connection with these statistics, and the thanks of the Department are again tendered to those gentlemen. Great care has been exercised in the preparation of the following returns, and the several tabulated statements have, for the purpose of comparison, been arranged in similar order to those published in previous years.

GOLD.

The estimates of gold raised in Victoria during the past two years are respectively:—

	1882.	Ozs.	dwt.	grs.	1883.	Ozs.	dwt.	grs.
Exported according to returns furnished by the Hon. the Commissioner of Trade and Customs.....	344,181	6	0	.....	393,413	18	0	
Received at the Melbourne branch of the Royal Mint.....	674,126	14	9	.....	664,141	18	9	†
Raised according to estimates made by Mining Registrars	864,609	18	4	.....	780,253	1	5	
Gold purchased in Melbourne from private holders by the Royal Mint, banks, &c.	29,877	0	0	.....	28,277	2	13	
Purchased according to returns made by managers of banks and others.....	898,535	18	16	.....	810,046	15	14	

Taking into account the estimates of the Mining Surveyors and Registrars, which are based chiefly upon the amounts of gold purchased by the banks in the country districts, and also the amounts of gold purchased from private holders in Melbourne, at the Mint, and at the several banks, the estimated yield of gold for the past year is 85,956 ozs. 14 dwt. 10 grs. less than the quantity obtained during 1882.

The estimates furnished by the Mining Registrars of the yield of gold from quartz mining have been compared with returns obtained from mineowners and others of gold actually derived from the treatment of quartz, quartz tailings, and pyrites, and the results closely agree. The quantity of quartz raised from the mines during the past year of which returns have been obtained was 924,430 tons 19 cwt., as compared with 1,027,826 tons 13 cwt. for the year 1882. The statement giving the yields of gold from parcels of quartz respecting which the Registrars have obtained information in the past two years shows that in 1882 there were crushed or treated 1,027,826 tons 13 cwt.; produce, 463,463 ozs. 4 dwt. 6 grs.; average per ton, 9 dwt. 0.44 grs.; in 1883 there were crushed or treated 924,430 tons 19 cwt.; produce, 440,686 ozs. 9 dwt. 2 grs.; average per ton, 9 dwt. 12.82 grs. The quantities of quartz tailings, mullock, &c., crushed and treated, and the results obtained therefrom, were:—In 1882, quartz tailings, mullock, &c., crushed, 17,677 tons 10 cwt.; produce, 2088 ozs. 11 dwt. 17 grs.; average per ton, 2 dwt. 8.71 grs.; in 1883, quartz tailings, mullock, &c., crushed, 27,190 tons 10 cwt.; produce, 2984 ozs. 18 dwt. 14 grs.; average per ton, 2 dwt. 4.69 grs. The quantities of pyrites, blanketing, &c., treated during the period and the gold obtained were:—In 1882, pyrites and blanketing treated, 6958 tons 10 cwt.; produce, 15,053 ozs. 7 dwt. 2 grs.; average per ton, 2 ozs. 3 dwt. 6.38 grs.; in 1883, pyrites and blanketing treated, 7675 tons 14 cwt.; produce, 15,984 ozs. 10 dwt. 20 grs.; average per ton, 2 ozs. 1 dwt. 15.59 grs. During the 15 years (1869-1883) 86,680 tons 1 cwt. of pyrites have been operated on, and a total yield of 204,665 ozs. 10 dwt. 21 grs. of gold obtained, equal to an average of 2 ozs. 7 dwt. 5.36 grs. per ton.

The quantity of gold returned by the Registrars as having been derived from quartz and quartz tailings and from pyrites during the year 1883 amounts to 459,655 ozs. 18 dwt. 12 grs.; but complete statements of the whole of the gold yields have not been received, consequently the difference between this quantity and the 475,587 ozs. estimated by the Mining Surveyors and Registrars represents the amount of gold, respecting which no definite information has been obtained of the stone crushed and pyrites operated on. The quantities of vein quartz crushed, and the average yield of gold per ton obtained therefrom, were during the past two years, according to the information collected by the Mining Registrars in the several districts of the colony:—

District.	1882.	Tons	cwt.	Ozs.	dwt.	grs.	1883.	Tons	cwt.	Ozs.	dwt.	grs.
Ballarat	466,754	5	0	6	14	11	345,677	8	0	5	15	59
Beechworth	33,579	4	0	12	16	35	33,326	18	0	12	8	42
Sandhurst	264,513	0	0	13	7	29	296,860	0	0	13	4	18
Maryborough	59,257	12	0	8	7	33	57,786	6	0	9	8	33
Castlemaine	107,215	0	0	5	20	51	101,964	0	0	8	17	07
Ararat	67,784	5	0	6	6	83	58,948	0	0	4	7	05
Gippsland	23,732	7	1	4	6	66	29,868	7	1	8	14	13

It is satisfactory to be able to again chronicle an improvement in the quantity of quartz crushed in the Sandhurst district during the last year, and also that the high average yield of gold has been maintained; but, on the other hand, the average and total yields from quartz in the Ballarat and Ararat districts have greatly fallen off during the past year. The quantity of quartz crushed in Gippsland is comparatively small, and the high average yield, as before explained, is partly due to the fact that in many parts of the mountainous districts quartz lodes giving poor yields could not be profitably worked. The quantity of wash dirt puddled or sluiced during the year 1883, as compiled from the returns made by certain companies and individual miners, was 826,829 tons 10 cwt., and the yield therefrom 76,333 ozs. 1 dwt. 11 grs., or an average of 1 dwt. 20.32 grs. per ton. Information has been obtained respecting the crushing of 6221 tons 3 cwt. of cement during the year 1883, which yielded 1655 ozs. 12 dwt. 18 grs. of gold, or an average of 5 dwt. 7.74 grs. per ton. The numbers of miners employed (in addition to 322 persons employed in 1883 in other than gold mining) in auriferous alluvial and quartz mining on Dec. 31 in each of the past two years were:—

District.	Alluvial miners.	Quartz miners.	Total.	Alluvial miners.	Quartz miners.	Total.
Ballarat	4,167	4,562	8,729	3,661	3,072	6,733
Beechworth	3,233	1,239	4,472	3,061	1,316	4,377
Sandhurst	1,916	4,925	6,841	1,697	4,737	6,434
Maryborough	5,233	2,377	7,610	3,799	1,823	5,622
Castlemaine	3,061	1,540	4,601	2,730	1,712	4,442
Ararat	1,933	562	2,495	1,583	614	2,227
Gippsland	1,470	672	2,142	1,012	769	1,781

Totals 21,013 18,877 39,890 17,543 14,078 31,621

It will be seen that in the last quarter of the past year there was a decrease of 5269 in the number of persons employed in auriferous alluvial and quartz mines as compared with the last quarter of the previous year. In alluvial mining the decrease in the number of men employed in 1883, as compared with the last quarter of the preceding year, was 3470, while in quartz mining the decrease was 1799. There is also a decrease of 3515 in the mean number of miners employed during the year 1883 as compared with those employed during the year 1882, the respective numbers being 33,931 and 37,446. The number of Chinese engaged in mining operations in Victoria continues to decrease. On Dec. 31, 1883, the number was 6337, or 837 less than the number employed at the same date in 1882. The decrease in the number of miners in the past year is caused by the gradual exhaustion of some of the older workings of the gold fields. Dividing the value of the gold raised, according to estimates made by the Mining Registrars and that purchased in Melbourne from private holders by the Royal Mint, banks, &c., amongst the mean number of miners employed in the year 1882, the average per man is 951. 6s. 3d. The averages for the past two years are:—In 1882: Alluvial miners, earnings per man per annum, 681. 14s. 1.39d.; quartz

miners, earnings per man per annum, 1317. 19s. 5.52d.; average earnings per man per annum, 957. 19s. 7.69d.; in 1883, alluvial miners, earnings per man per annum, 661. 4s. 4.14d.; quartz miners, earnings per man per annum, 1327. 13s. 1.81d.; average earnings per man per annum, 957. 6s. 3.51d.

During the past year the number of steam-engines employed in alluvial mining has increased by eight, and the number employed in quartz mining has increased by five, as compared with the previous year. The approximate area of auriferous ground over which mining operations have extended up to the end of 1883 is 1355½ square miles, and the number of distinct quartz reefs proved to be auriferous is 3779. The total area occupied as mining claims under the provisions of the bye-laws of the several Mining Boards and the area held under leases from the Crown were on Dec. 31 in each of the past two years—Total area held as claims: 1882, 63,984A. 1R. 31P.; 1883, 66,228A. 3R. 24P. Total area held under leases: 1882, 33,908A. 3R. 27 7-10thP.; 1883, 32,083A. 1R. 18 2-10thP.

The deepest shaft in the colony is the Magdala, at Stawell, which is 2409 ft. deep; other shafts in the same locality are 1940, 1830, 1815, 1770, 1565, and 1326 ft. from the surface. At Sandhurst there are shafts 1993, 1778, 1563, 1490, 1483, and 1450 ft. deep respectively; at Maldon one of 1220 ft. from the surface; and at Clunes, two shafts, 1210 and 1193 ft. respectively.

The information furnished in the Quarterly Reports of the Mining Surveyors and Registrars respecting the yields of gold obtained from great depths shows:—8273 tons of quartz, obtained from the Ballarat mining district at depths varying from 590 ft. to 1205 ft. from the surface, yielded from 5 dwt. to 8 dwt. 19 grs. of gold per ton; 3224 tons of quartz, from depths varying from 300 ft. to 600 ft., from the Beechworth mining district, yielded from 4 dwt. 17 grs. to 17 dwt. 2 grs. of gold per ton; 87,347 tons of quartz, obtained at Sandhurst at various depths from 500 ft. to 1306 ft., yielded from 7 dwt. 1 gr. to 2 ozs. 6 dwt. 14 grs. of gold per ton; 31,987 tons of quartz from the Maryborough mining district, obtained at depths varying from 300 ft. to 820 ft., yielded from 5 dwt. to 3 ozs. of gold per ton; 20,521 tons of quartz from the Castlemaine mining district, obtained at depths varying from 300 ft. to 745 ft., yielded from 6 dwt. 11 grs. to 6 ozs. 18 dwt. 1 gr. of gold per ton; 2306 tons of quartz, obtained at Stawell from a depth of 1200 ft., yielded 8 dwt. of gold per ton; at Stringer's Creek, in the Gippsland mining district, 22,727 tons of quartz, obtained at depths varying from 300 ft. to 723 ft. below adit levels, yielded from 17 dwt. 23 grs. to 1 oz. 17 dwt. 7 grs. of gold per ton; and elsewhere in the same district small quantities of quartz, amounting to 112 tons, taken from a depth of 800 ft., yielded from 17 dwt. 12 grs. to 19 dwt. per ton. On Dec. 31 there were 1698 gold mining leases in force, and 10,333 men were employed upon 1566 of these leases. The revenue derived directly from the gold fields and mineral districts, according to the actual receipts at the Treasury, exclusive of fees, fines, and forfeitures during the last two years was:—

	1882.	£	1883.	£
Miners' rights	5,711	9	0	5,427
Business licenses	470	0	0	407
Rents for leases of auriferous and mineral lands	15,688	13	1	15,091
Water right and searching licenses	673	5	11	717

Totals £22,543 8 0 £21,644 5 8

One candidate presented himself for examination in Mining Surveying during the year, but failed to pass. Seven applications were lodged during the year for rewards for the discovery of new gold fields.

With regard to metals and minerals other than gold it appears that during the past year no silver ore has been raised: 12,121 45 ozs. of silver were parted from gold smelted at the Melbourne Mint. The tin ore and black sand raised amounted to about 94 tons 4 cwt. 2 qrs. 14 lbs., of which about 35 tons 14 cwt. when smelted yielded from 30 to 72 per cent. of tin, and 15 tons 19 cwt. of ore were exported. Tin exported during the year amounted to 57 tons 14 cwt. According to returns received 381 tons of copper ore were raised during the year; and 1 ton of ore, 33 tons 11 cwt. of copper, and 70 tons of regulus were exported. There were raised during the year 35 tons 10 cwt. 2 qrs. of antimony ores, but no portion of this quantity was smelted in the colony. This is the only reliable record of any quantity of proper antimony ore raised. According to the Customs Returns 114 tons of ore were sent to England for treatment and sale, and this was supposed to have been obtained chiefly at Castlemaine at various times, from quartz mixed with antimony ore, of which no record was kept as to the quantities. There was no lead ore raised during the year. About 1200 tons of iron ore were raised, which when smelted produced 600 tons of metal. According to returns received 428 tons 4 cwt. 2 qrs. of coal were raised during 1883. There were 330 tons of lignite raised during 1883, but no coal or lignite was exported; and about 1770 tons 2 cwt. 2 qrs. of flagging were quarried.

Fuller information relative to the mining of metals and minerals other than gold may be found in the tables and in the remarks upon metalliferous minerals.

The numbers of miners employed during the quarter ended Dec. 31 in mining for metals and minerals other than gold were:—Tin miners, 19; antimony miners, 20; ironstone miners, 168; kaolin miners, 10; lead miners, 4; coal miners, 48; slate and flag miners, 41; lignite miners, 12: totals, 322.

HYDRAULIC MINING IN CALIFORNIA, WITH EXPLANATIONS CONCERNING THE ORIGIN OF GOLD-BEARING ALLUVIUM THERE, AND ELSEWHERE.*

BY GEORGE O'BRIEN.

Our knowledge of the primitive operations of the aboriginal inhabitants of the globe in pursuit of gold is barely traditional, as we are only aware that from very early times the precious metal was collected and highly prized by them, and that they chiefly extracted the visible gold, which existed in prodigious quantities on, or closely beneath the surface of the earth, and of its being particularly abundant in Asia and Africa. But we can draw more positive conclusions as we survey remains of the rude but effective contrivances used by them in later, but still remote, periods, with full evidence as to the extent of their operations in the numerous perpendicular shafts located at short distances from each other, over large areas of auriferous gravel in India, as well as from precisely similar memorials of ancient workings which remain, also further demonstrations in the abandoned hill diggings and shifted beds, and beds of rivers, in Peru, South America, flowing between the sea and coast ranges of the Andes, descending in a north-easterly direction to the River Amazon, and that their much-coveted and enormous productions were the accumulated riches of the Incas, transferred as spoils of war to their Spanish conquerors in the sixteenth century. And for similar explorations in the same class of depositions we have the experiences of our own times, and which explain by comparison all the previous operations alluded to.

In hydraulic mining, the first work to be accomplished, after calculating that the amount or value of the material to be operated upon is sufficient to guarantee the cost of the undertaking in general, is the construction of a canal or canals to convey the requisite volume of water from the fountain-head, and of sufficient elevation to command the ground to be worked upon, having also in view the levels of the necessary tunnels and shafts as outlets for the discharge of the gravel through them, these being engineering operations requiring much skill and labour to avoid useless after cost. Aqueducts of considerable elevation have to be constructed across deep valleys, and the speculation is at all times problematical, as the ground cannot be properly tested until the water arrives upon it, and disputes may arise between the shareholders of the canal and the mining company, ending frequently in the one devouring the other, unless the two interests be quickly amalgamated.

The starting point should be the lowest level, or bed-rock, on the white cement in the ancient channel, which is probably the original silt collected in it, and is harder than the conglomerate above it, which is more easily removed. The courses of these beds can be easily traced by landmarks and undulations, and occasional

exposures of the bed-rock at low levels; also trial shafts are sunk in various places in search of it, to a depth of 100 ft. through blue gravel. The grades of these beds are not steep, but from 10 to 40 ft. per mile as of an ordinary river, and the calcareous thickness of the alluvial conglomerate is about 600 ft. in places across the ridge between the South and Middle Yuba rivers across the Colombia. The power of the water for the operation dependent on a given volume deposited in a reservoir, and at a sufficient elevation above the points of discharge, as on this depends its effectivity to tear down the gravel. It is delivered to the mine by huge pipes made out of wrought iron, and laid down to follow the curvatures of the surface of the ground; and the pipe I now treat belonging to the Excelsior Water Company, has a diameter of 30 in. on a length of 6000 ft., and 20 in. on the rest of its length of 3000 ft. being 9000 ft. in all; and this large pipe forms an inverted siphon across a valley, following on the gravel, to the top of the hill, the reservoir.

These pipes offer advantages over wooden aqueducts for apertures, and also to avoid coursing the sides of valleys; being cheaper to construct in general, and less liable to accidents from storms, and have the convenience for conveying the water from point to point as the work of excavation advances, necessitating the removal of portions of the aqueduct forward. The watershed reservoir of the Excelsior Company embraces the valley of the Yuba and its affluences, and the entire cost of its eight animated canals was \$750,000. The rainfall during three years in mountains averaged 49 in. annually, whilst the medium in the period did not exceed 20 in. in the plains beneath. The height of the reservoir above the talling, or Yuba river, is 393 ft.; and the height of the head above the floor, or outlet sluice tunnel, of the Blue Gravel Mining Company was 197 ft.

The exact quantity of water required to wash every class of gravel is difficult to estimate, but no quantity or pressure would be excessive if properly arranged. The measurement of water is effected by miners' inches, by allowing it to flow from the reservoir of a seller to the purchaser through a box 10 or 12 ft. square, with divisions to obtain a quiet head, with a slide or opening capable of adjustment to any required measure; thus an opening 25 in. by 2 in., with a quiet head of 6 in. above the level of the orifice, would give 50 in., or about 89,250 cubic ft. of water, flowing during ten hours per day, being an amount necessary for a first-class operation. The capability of the Excelsior Canal, in rainy seasons, reached to a delivery of 24 hours, to the various mining companies, of 21,120,000 cubic feet of water, or 8000 miners' inches; and the value of the water paid for by the Blue Gravel Company in 43 months ended Nov. 1867, was \$157,261, being at the rate of 15 cents of \$1 per miner inch; and the proportion of water used to wash down 989,165 cubic yards of gravel was 17,074,753 cubic yards, or 17½ cubic yards of water to 1 cubic yard of gravel; and when at work the quantity of gravel daily moved was 1298 cubic yards, and the estimated cost to move 1 cubic yard of gravel was 5 and 7-10ths cents of \$1. But in the face of contingencies the Blue Gravel Company moved 1,000,000 cubic yards of gravel in four years, or at the rate of 250,000 cubic yards per annum, and the cost of washing each cubic yard stands thus:—

Cost of water at 15 cents per miners inch	Cents. 5.75
Cost of labour, gunpowder, sluices, and superintendence....	16.10

Or 21½ cents of a dollar per cubic yard. Thus the gravel should contain gold to the value of 22 cents of a dollar per cubic yard to cover cost, and the value of the gravel referred to ranged from 10 to 45 cents per cubic yard; and the cost of work done in shafts and tunnels in the said Blue Gravel Company's mining claim reached \$100,000. But with the cost of the necessary canals, paid for by the Excelsior Water Company apart, the total cost amounted to about \$1,000,000, and we must note that the latter company sold water to other mining companies.

The mining ground being selected a tunnel is projected from the nearest and most convenient ravine, so that the starting point on the bed rock towards the face of the ravine shall approach the centre of the material to be removed at a gradient of 1 in 10 to 1 in 30. The dimensions of such tunnel are usually 6 ft. in width by 7 ft. in height, and continuing in contact with the hard river bed for the greater ease of excavation, collection of gold, and conservation of quicksilver amalgam. These tunnels vary in length from a few hundred feet to a mile, and some of the longer ones occupying from one to several years in execution, at a cost of from \$10 to \$60 per foot of frontage. The tunnel of the Blue Gravel Company, with length of 1358 feet, cost in labour alone \$70,000, but it could now be driven for \$35,000 as skilled labour is cheaper now than then. The grade in this tunnel is about 12 per cent., and the end of the tunnel is designed to be 170 ft. of elevation, and reaching to a point beneath the surface of the gravel, which is being operated upon, and where a shaft or incline is sunk through the bed-rock or gravel, until it intersects the tunnel. The object of this laborious operation is obvious, as the long tunnel becomes a sluiceway, and through the whole length of which sluice-boxes are laid, for the double motive of carrying off the material and saving the gold, and for this purpose a trough of strong plank is placed in the tunnel 2½ ft. wide, and with sides high enough to contain the stream. The pavement of the trough is generally laid of blocks of wood 6 in. in thickness, cut across the grain, and placed on their ends, to the width of the sluiceway. The wooden blocks are usually alternated with sections of stone pavement, the stones being set endwise, and in the interstices between the stones and wooden blocks quicksilver is distributed, and as much as 2 tons of this metal is required to charge a long sluice.

The water in the canal is brought by aqueducts or other means to the head of the mining ground, having an elevation of 100 to 200 ft. above the lowest level of the mining ground, and is finally conveyed to it by iron pipes, sometimes sustained on a strong incline of timber. These pipes are of sheet-iron of adequate strength, riveted at the joints, and measure from 12 to 20 in. in diameter, and communicate at the bottom with a strong prismatic box of cast-iron, on the top and sides of which are openings for the adaptation of flexible tubes, made of very strong fabric of canvas, strengthened by cording, and terminating in nozzles of metal of 2½ in. to 3 in. in diameter. From these nozzles the streams of water are directed against the face of the gravel to be washed, exercising incredible effectivity. The volume of water employed varies of course with the work to be done, but it is not uncommon to see four or five streams acting simultaneously on the same bank, each conveying from 100 to 600 in. of water per hour—1000 miners' inches being equal to 106,600 cubic feet of water per hour, constantly exerting force under a pressure of 90 to 200 lbs. to the square inch, varying with the height of the column. Under the continuous action of this enormous force, aided by the softening power of the water, large sections of the gravelly mass are dislodged, and fall with great violence, the debris speedily disintegrating and disappearing under the resistless force of the water, and is hurried forward in the sluices to the mouth of the shaft, down which it is precipitated with the whole volume of turbid water. Boulders of 100 to 200 lbs. in weight are dislodged and shot forward by the impetuous stream, accompanied by masses of the harder cement which meet in the fall, and by the concussion from the great boulders the crushing and pulverising agency required is found to disintegrate it. The heavy boulders of 80 ft. and upwards are usually worked in two benches, the upper never being so rich as the lower, and also less firm, and therefore worked away with greater rapidity.

Rude as this plan of saving gold appears to be, more gold is procured by it than by any other method of washing yet devised for this process of work, and the economical advantages obtained by it cannot be surpassed, as it would be impossible to handle such vast quantities of material in any other way, and we can compare the cost of washing and handling a cubic yard of auriferous gravel by it—By manual labour with the pan, \$15.00; by manual labour with a rocker, \$3.75; by manual labour with the long tom, \$0.75; and by the hydraulic process, \$0.22. But this process, even if effective or profitable as a mining operation, may be prejudicial to the interests of the general public, if conducted on a large scale.

* Inclusive of 187,651 ozs. 3 dwt. 19 grs. purchased and resold at the Mint. † Of this quantity 264,888 ozs. 6 dwt. 9 grs. were shipped to Europe as bullion, and will consequently be included in Customs returns of gold exported.

* Abridged from Journal of Science for August.

of material which it so suddenly removes is merely shifted into shallows beneath, to be re-distributed by every freshet to points and lower down until it reaches the sea-coast, creating bars at mouths of rivers in its course, and changing the hydrography of bays—as it has done with the Bay of San Francisco by its silt. The hills behind, torn up and washed by the gold miner, are abandoned as desolate and irredeemable; and the costly canals, connected with peculiar conveniences for mining purposes, eventually fall into disuse from being too expensive to maintain or alter for general agricultural uses.

INTERNATIONAL INVENTIONS EXHIBITION, 1885.

The opinion has already been expressed in the *Mining Journal* that the exhibition in London of the various kinds of mining and metallurgical appliances used in the different mining districts and mining countries of the world would be of mutual advantage to miners everywhere, and it was also suggested that such a project could only be satisfactorily carried out with the cordial co-operation of those who have made the Fisheries and Health Exhibitions such great successes. Although not distinctly an international mining collection, the INTERNATIONAL INVENTIONS EXHIBITION which is to be held next year, and of which the preliminary advertisement appears in our column, will, in almost every respect, answer the purpose, and everything of essential importance for showing the extent and nature of mining enterprise, and the methods in which it is carried on, can be included. The prospectus states that the collection of inventions will, it is hoped, serve to bring vividly before the public progress which has been made during the last quarter of a century in applying the discoveries of science to the purposes of daily life. For the practical realisation of this idea it will be desirable not only to exhibit the apparatus by which a process is carried out (or a model or diagram of it), side by side with the resulting product, but to show the working of, at all events, a limited number of industrial processes in their consecutive stages.

The exhibits are to be limited to apparatus, appliances, processes, and products invented or brought into use since 1862, and are to be arranged in 31 classes:—1. Agriculture, horticulture, and arboriculture. 2. Mining and metallurgy. 3. Engineering construction and architecture. 4. Prime movers and means of distributing their power. 5. Railway plant. 6. Common road carriages, &c. 7. Naval architecture. 8. Aeronautics. 9. Manufacture of textile fabrics. 10. Machine tools and machinery. 11. Hydraulic machines, presses, machines for raising heavy weights, weighing, &c. 12. Elements of machines. 13. Electricity. 14. Apparatus, processes, and appliances connected with applied chemistry and physics. 15. Gas and other illuminants. 16. Fuel, furnaces, &c. 17. Food, cookery, and stimulants. 18. Clothing. 19. Jewellery. 20. Leather, &c. 21. India-rubber and gutta-percha, &c. 22. Furniture and accessories—Fancy goods. 23. Pottery and glass. 24. Cutlery, ironmongery, &c. 25. Firearms—Military weapons and equipments; explosives. 26. Paper, printing, bookbinding, stationery, &c. 27. Clocks, watches, and other time-keepers. 28. Philosophical instruments and apparatus. 29. Photography. 30. Educational apparatus. And 31. Toys, sports, &c. There is also a second division, embracing three classes relating to music. Subjoined are the classifications adopted in the groups in which the readers of the *Mining Journal* are specially interested.

GROUP II.—MINING AND METALLURGY.

Class 8.—Machinery and Appliances used in Mines and Quarries: Prospecting, searching, boring, shaft sinking, exploring, working, hauling, pumping, winding, hoisting; man-engines, safety-catches, safety-hooks, hydraulic mining; tools, drills, cutters, getters, breakers, compressors; blasting, substitutes for explosives. Ventilating, raising. Aids to respiration in mines. Life-saving appliances. Washing and dressing coal and other minerals, crushers, pulverisers, integrators, stamps, screens, riddles, separators, classifiers, jiggers, saddles, precipitators, saving-machines. Utilisation of waste. Class 9.—Production and Manufacture of Iron and Steel: Coke ovens, blast and other furnaces; Bessemer plant, Siemens plant, other processes of making iron and steel; blast-engines; hot-blast ovens; steam and other hammers; rolling-machines; hydraulic and other forging machines, squeezers and other shingling apparatus; production and use of malleable cast-iron; wire-making apparatus; manufacture of tin-plate, utilisation of gases and of slag; alloys and artificial compounds of iron with non-metallic elements. Class 10.—Forging and Foundry Work: Cupolas, air-furnaces, pot furnaces; moulding machines, plate-moulding; forges, forging machines, bellows, blowers, fans.

Class 11.—Metallurgy of Metals other than Iron, with the exception of the Precious Metals—Alloys: Furnaces and appliances used in the dry and wet methods of extracting and purifying copper; extraction of lead; metallurgy of zinc, tin, nickel, cobalt, bismuth, antimony, arsenic, mercury, aluminium; manufacture of sheet lead, and pipe, Muntz's metal, sheet zinc, copper and brass tubes; bronzes, German silver and other nickel alloys; wires of copper and its alloys. Class 12.—Metallurgy of the Precious Metals, Gold, Silver, and Platinum: Furnaces and appliances used in the dry and wet methods of extracting the precious metals; desilverisation of lead; amalgamation in all its forms, refining gold and silver; purification, melting, and working of platinum and its alloys.

GROUP III.—ENGINEERING CONSTRUCTION AND ARCHITECTURE.

Class 13.—Roads: Methods and materials for constructing and laying roads; cleansing roads and pavements; road sweeping machines; rollers; apparatus for the removal of mud, snow, &c. from carts, and other means of watering. Class 14.—Railways and Tramways: Construction; excavators and appliances used for earth-work and tunnelling. Permanent way; rails, chairs, sleepers.

Class 15.—Bridges and Viaducts: Models, plans, and designs for arched, girder, suspension, trestle, and other bridges; apparatus used in construction.

Class 16.—Docks and Harbours: Models, plans, and designs for docks, harbours, piers, breakwaters, &c.; submarine constructions; diving apparatus; dredging-machines; pile-drivers, screw piles; cofferdams; graving docks, "patent" slips, caissons, pontoons, floating docks, hydraulic apparatus for working dock-gates, &c., gridirons. Buoys.

GROUP IV.—PRIME MOVERS, AND MEANS OF DISTRIBUTING THEIR POWER.

Class 26.—Steam-engines and Boilers: Stationary, portable, marine, locomotive; fireless locomotives; methods and means of preventing corrosion and incrustation; methods and appliances for preventing explosions, and for testing boilers; fire-grates, fire-feeders, smoke-consuming appliances; valves and valve gear, steam joints, governors, injectors, pumps; bearings, lubricators, anti-friction metals; indicators, gauges, manometers, tachometers, dynamometers.

Class 27.—Gas and Air-Engines, &c.: Gas-engines, hot-air engines, petroleum-engines; air-compressors, compressed-air engines; ammonia-engines, vapour-engines; accessories for the above.

Class 28.—Means of Utilising Natural Forces: Turbines, water-wheels, tide mills; means of utilising wave power; hydraulic rams, water-pressure engines; windmills; solar engines.

Class 29.—Means of Transmitting Power: Driving bands, shafts, pulleys, gearing, clutches, distribution of power by water or by air.

GROUP V.—MACHINE TOOLS AND MACHINERY.

Class 56.—Metal-working Machines: Lathes; planers; machines for punching, shearing, sawing, drilling, boring, slotting, shaping, milling, wheel-cutting, screw-cutting, rolling and bending, corrugating, stamping, coining, pressing, riveting, forging; emery-wheels, grinding-machines; rivet, nail, bolt, and screw-making machinery.

Class 57.—Wood-working Machinery: Lathes (including lathes for ornamental turning); machines for sawing, planing, moulding, mortising, carving, veneering, cask-making, wheel-making, cork-cutting, &c.

Class 58.—Stone-working Machinery: Machines for sawing, planing, turning, dressing, polishing, grinding, breaking, and crushing stone and slate.

GROUP XI.—HYDRAULIC MACHINES, PRESSES, MACHINES FOR RAISING HEAVY WEIGHTS, WEIGHING, &c.

Class 59.—Pumps, hand, steam, rotary, centrifugal: Ships' pumps, pumps for corrosive fluids, hydropulps, syphons, methods of raising water, methods of obtaining, distributing, and equalising hydraulic power, accumulators.

Class 61.—Cranes and other Lifting Apparatus: Hand, steam, and hydraulic cranes; travellers; elevators, jacks, capstans, windlasses, crabs, hoists, blocks, pulleys, derricks.

Class 62.—Hydraulic and other presses.

Class 63.—Weighing machines (for commercial purposes): Steel-yards; platform weighing machines; commercial balances, scales, weights, &c.; registering weighing machines; spring balances.

GROUP XIII.—ELECTRICITY.

Class 66.—Generators: Dynamos, primary and secondary batteries, thermo-electric batteries.

Class 67.—Conductors: Submarine cables and apparatus for laying them; aerial wires, and underground cables; insulators and poles; insulating and coating materials; joints and connections; underground conduits; pipes, tubes, troughs, &c., electric light heads.

Class 68.—Testing and Measuring Apparatus: Galvanometer, magnetometers, dynamometers, volt-meters, current-meters, methods of testing.

Class 69.—Telegraphic and Telephonic Apparatus: Needle instruments, A B C instruments, Morse instruments, type-printers, relays, duplex and quadruplex apparatus, keys, recording instruments, automatic transmitters, electric bells, indicators, telephones, microphones, lightning protectors.

Class 70.—Electric Lighting Apparatus: Lamps, resistance coils, cut-outs, safety-catches, switches. Fittings for glow and other lamps.

Class 71.—Electro-Metallurgy and Electro-Chemistry: Methods of depositing and coating various metals. Electrotyping, galvanoplasty. Vats, cleaning and polishing apparatus, materials, tools, and appliances.

Class 72.—Distribution and Utilisation of Power: Electric railways, electric motors, electrically-driven boats, tricycles, and other conveyances; systems of distribution.

Class 73.—Electric Signalling: Fire and burglar alarms, railway, ship, and time signals, water-level and wind-indicators, tell-tales, electric clocks, chronoscopes, &c.

Class 74.—Lightning Conductors.

Class 75.—Electro-Medical Apparatus.

Class 76.—Electrolytic Methods for Extracting and Purifying Metals: Copper, zinc, lead, iron; refining the precious metals.

Class 77.—Electro-Thermic Apparatus: Electrical apparatus for war, mining, blasting, and other purposes.

GROUP XVI.—FUEL, FURNACES, &c.

Class 88.—Manufacture of Fuel: Materials and processes for the manufacture of artificial fuel; preparation and use of liquid fuel; preparation of peat; charcoal burning.

Class 89.—Furnaces for Manufacturing Purposes: Furnaces for burning solid, pulverised, liquid, and gaseous fuel.

Class 90.—Stoves for Coal, for Gas, for Oil, &c.: Cooking-stoves and kitchen ranges; domestic fireplaces; gas-cookers; gas-burners for heating and cooking; petroleum and other stoves for heating and cooking.

GROUP VIII.—PHILOSOPHICAL INSTRUMENTS AND APPARATUS.

Class 155.—Geographical: Surveying apparatus, theodolites, chains, levels; underground surveying apparatus; apparatus for hydrographic surveying, and for marine investigations and observations; hypsometrical instruments; tide gauges; seismographical apparatus; projections, maps, charts, models, and globes.

ENGLAND'S INDUSTRIAL SUPREMACY IN THE MANUFACTURE OF IRON*—No. V.

BY SIR FRANCIS C. KNOWLES, BART., M.A., F.R.S.

We have, no doubt, yet to learn the proper methods of treating some of them, if they are to enter, beyond a small proportion, into the charges of our blast furnaces; but all this will come in time, when we shall have trained up a superior class of men to take charge of that most important branch, furnace management. With furnaces capable of yielding 400 tons a week (and that not the limit of possibility), a handsome salary to an intelligent manager combining chemical with practical knowledge, would repay itself an hundred-fold in the results to be obtained. In this respect we may take a few good hints from the practice of our neighbours over the water.

We must not omit to notice the celebrated "Blackband" of Scotland and of South Wales, both, singular to say, discovered by the same person, the late Mr. David Mushet, of Coleford, whose knowledge and sagacity, in the face of prejudice and ridicule, thereby realised millions sterling for everybody interested, except, alas! himself—all honour to his name and memory! We recommend our readers to visit the field of Airdrie, near Glasgow, where this mineral was first opened; they will there see what it has created, and be able to appreciate its future far better than from any description in words.

"Segnius irritant animos demissa per aures
Quam quæ sunt oculis subjecta fidelibus, et quæ
Ipse sibi tradit spectator,"
says our old friend Horace, and never could the lines apply more correctly than in this case.

In South Wales, we regret to say, the blackband is, as yet, neither understood nor appreciated. There are two veins, an upper and a lower vein, greatly differing in their earthy composition; one, according to several analyses of the writer, containing on an average 57.4 per cent. of silica, and admirably saturated by alumina and lime, with 60 per cent. of iron; the other containing about 14 per cent. of silica, not so neutralised, and 56 per cent. of iron. Yet these two ores, because they go by the same name, for no other reason is discoverable, are pitched indiscriminately in huge lumps into the furnace, whence, to use the forcible description of a friend, "the iron is dragged out by the hair of its head." The clamps (heaps) in which this ore is calcined in South Wales exhibit a large sublimation of sulphur on the surface. It is not difficult to imagine simple processes by which, at no great cost, the ore could be freed from this noxious element, and put into the furnace in a more suitable adjustment of its earthy components. When this is done, we are sure that no ore in the South Welsh basin will yield iron better or more abundantly, and the quality of the pig metal will rival that of Scotland itself. If this ore should extend through Carmarthenshire into Pembrokeshire, in association with the true stone coal, as is probable, there will be flourishing ironworks there long after the Belgian furnaces are cold monuments of a former industry.

The limestone necessary as a flux for the iron ores is, generally speaking, very pure and moderate in price, and in many situations, particularly in the North of England, there is the choice of magnesian limestone to render the clinder more easily fusible and liquid, and more free from iron, thus economising both ores and fuel, and improving the quality of the produce, while protecting the furnace from accidents.

We cannot close this part of our subject without saying a few words on the subject of peat fuel, of which there is an enormous store both in England and Scotland, and in Ireland. Without entering into the vexed question whether peat-coke can be successfully and economically used in the smelting of iron ores, we have no doubt whatever that it could be employed in the German refining forge with most excellent effect upon the produce. Thus the pig metal made so cheaply and abundantly in Yorkshire and in Scotland could be transported to the peat charcoal, the water power, and the cheap labour of Ireland, there to create a new branch of industry, to the comfort and happiness as well as to the social improvement of thousands of her sons. We feel strongly that these peat bogs are

* Being the Newcastle Prize Essay first published in 1867, and now reprinted because indicating the direction whence an improvement in our iron industry may be looked for.

really part of the resources of our iron industry, and we cannot too strongly protest against the wretched economy and short-sighted policy which propose to drain the peat, and by killing the "sphagnum" in which it takes its growth, cut off for ever the supply of this valuable store of fuel.

LABOUR.

We now arrive at what seems, after the comparison of the material resources of England with those of Belgium, to be the turning point of this controversy—the comparative value and price of labour, and the comparative advantages under which it is employed in the two countries, as arising partly out of the artificial relations between masters and men, and partly from the action of the Government. We dismiss at once, as quite insensible in effect, the differences in the tenure of minerals in the two cases. It cannot possibly signify, where the market rate is to be paid, whether the royalty, or "redemption," be paid to an individual, or to the Government, except that in the latter case we may have to suspect the possibility of political favouritism, particularly where the opening of any new establishment is hedged in by so many formalities, instead of depending upon the mere will of the parties interested, as it does with us, to which we give our decided preference. In what, then, does the relation of the Belgian workman to his work, or to his employer, excel our own?

Messrs. Creed and Williams say that he is more free from the interference or restrictions of the Government (*Times*, Dec. 24, 1866). We cannot see this. He is prohibited from employing in the works his children under 10 years of age, and he is compelled to subscribe to a fund devoted to their education, to the relief of himself and his family in sickness, and to making provision for his widow and orphans, to which fund his employer also contributes. What is this but a substitute for a poor rate, and for the voluntary system of education of England, in exclusion of that superior moral discipline surely implied in the establishment of benefit societies and insurance societies by the action of the men themselves? That it is desirable to make the schools for the children of our working men more industrial than they are may be true, but we still may think that the first end of education is to form a more intelligent and moral member of society, a better citizen, not a mere industrial machine to be worked out by capital. As to the restriction, in point of age, at which our youth should be employed in mines and forges, there is something more to be considered than the supply of cheap labour for the masters, or extra present gains for the families of the men. It is our duty to watch over the perfection of our race, to which we owe all our supremacy alike in the arts of peace for our comfort, and in those of war for our protection and security. In this respect, as in others, to live upon our capital, as it were, to bring into existence a puny race, degenerating with each successive generation, of stunted growth, feeble constitution, and weak intelligence, is not the way in which to win in the great race of industry; it is absolute ruin, hopeless and irretrievable. Far from depressing the action, both of Government and of private benevolent institutions in this direction, we invite it, for it cannot be too efficient for its great purpose.

Upon the whole, we cannot arrive at any other conclusion than that Messrs. Creed and Williams, no doubt actuated by the best of motives, have been needlessly alarmed by a mere commercial accident, depending probably upon an ill-advised regulation of prices by the ironmasters in the circumstances of the market, and unreasonable demands of the men, as a reference to the facts and figures would readily prove.

The action of the trades unions has, we admit been ill-judged and injurious to the prosperity of the trade; but so has been also that of the masters' unions. The only cure of the evil, we submit, is to dissolve both unions, and make the simple but wholesome experiment whether we cannot get on better without them. There are no bankers' unions, cotton masters' unions, &c., although men in the same interest necessarily have a tacit concert of action in business. Competition, open and unrestrained, individual action prompted by individual sagacity and free as air, is the real cure for the evil. What an absurdity it is for a body of men, the very essence of whose commercial existence is hourly rivalry in contracts and sales, to profess to have a common action in the market! One man has a speciality for iron suitable for rails; another for iron suitable for nailrods; a third for iron suitable for gun-barrels; and so on through a dozen different applications of the material: how can these men agree upon the prices which are to rule the market? Again, one man has a superior, the other an inferior, or more costly, supply of coal or iron ore: how can any price be devised to meet cases so different?

The same applies to the men employed. Hitherto the practice has been (masters and men have been equally to blame) to deal with the mass wholesale, without the slightest reference to superiority in manual skill, or power, or intelligence, leaving no fairplay to honest ambition and to the gifts of Nature, but reducing the clever and the stupid, the active and the lazy, the giant and the dwarf, to one and the same dreary, hopeless level, from which there is no escape.

But we are rejoiced to see that at last the more intelligent of the men are awaking to a sense of their thralldom, and are taking resolution to abstain from any longer forging fetters for themselves, and are forming a counter-union for the purpose of common action and mutual protection against the tyranny of their trades unions.

As a substitute for the unions, both of the masters and of the men, we venture to suggest a union of both, and the establishment of meetings at which prizes of value and distinction in medals, &c., should be given to the best workmen in each class of labour; that classes should be formed, according to the merit displayed on these occasions, under the adjudication of juries fairly chosen, and that thenceforth, by common consent of all, wages should be decided upon between masters and men according to the quality of the labour to be hired. It is hardly necessary to add that a certain length of service should determine the preference of the superior classes for the position of foremen and overlookers in the mills and forges, &c., as a pension fairly earned by long, valuable, and faithful service.

To resume: We venture to come to the conclusion that if we do not fear Prussia and Germany, with their pure and magnificent stores of iron ores of all kinds, it is certainly not Belgium that need cause us any alarm for our supremacy in siderurgy. Our material resources are proved to be far superior in quality, lower in price, and boundless in extent, and our men are even more splendid than our minerals. Let us watch with parental care over this last, this best, this most precious gift of Providence, and rest assured that our patrimony is the oldest and most noble of human arts, is not destined to pass away from us—least of all into the puny hands of the Wallons and the Flamands. We have said nothing of the improvement of our methods by means of the applications of scientific discovery; but we are at least upon a level with other nations in that respect, and are not very likely to fall behind in the race. Mr. Martien opened a new field in the conversion of cast metal; Mr. Bessemer, skilled in turning to practical account the inventions of others by a small supplement of his own, followed; and we are told in confidence that another method is ere long to be applied, which will accomplish all that Mr. Bessemer professed to do in the first instance, but has not as yet succeeded in doing; and then a new era in the fabrication of iron will commence, more splendid than the past.

POSTSCRIPT.

Since the above was written, it is a great satisfaction to learn that the doubts of the writer, as to the genuine character of the iron said to be the produce of Belgium, and delivered under this much talked of Dutch contract, turn out to be something more than mere suspicion or conjecture. It has transpired (see a letter signed "Septimus Ledward" in the *Times Money Article* of Feb. 14, 1867) that pig-iron has been largely imported from England into Belgium, converted by cheap labour in the mills and forges of that country, and re-exported to be sold as Belgian produce! This is in exact accordance with what we know *alimado* to be the commercial morality of that country. But we are able to add something to the information conveyed in the above letter. The writer of this essay was present at a series of trials in the puddling furnace made of mixtures of first quality English pig and other metal with metal the produce of Belgium, and the result was that one-fourth of the charge sufficed to give a totally different quality to the produce—in fact, to convert it from indifferent, or even positively bad iron, into iron of very fair, sometimes, in the case of best Belgian metal, into excel-

from the shaft 37 fms. 3 ft.; driving by six men, at 47, 10s. per ton. The lode in the present end is small and unproductive; however, we must regard the driving of this end as one of the principal features in the mine. The shaft is fast approaching the great slide dipping west from Harvey's shaft. The end near the point yielded enormous quantities of rich tin, and this end is 40 fms. 10 fms. under Harvey's shaft. The 40 west is driven 23 fms. 1 ft.; driv-

Expenditure: The expenditure was 10781., somewhat higher than usual, owing to the large payment of freight, firewood, and the passage, &c., of Mr. Edwards' party, which has been valued at 11451. I hope next mail to give you good remittance, and with all our stamping power at work. I have great expectations for the wet season.

MONTANA.—Telegram from Manager, Aug. 12: 10 stamps 27 days; 29 stamps 19 days; 1591 tons. Ore tallings value \$21,760; 60 tons concentrates unworbed. Additional stamps finished in about a week.

MYSOBE GOLD.—B. D. Plummer, July 19: Mining Operations: In my letter last week I gave you some account of the workings in the No. 1 mine, but the engine shaft, on the underlie. Since then we have dropped the pump 4 ft. 2 in. which has so lowered the water as to allow us to a small extent to explore the old workings south of the shaft. The ore has been taken away as far as we could get, and beyond this the gunnies are filled with attle, or deads. Since these workings were broken into it has been a subject of some speculation with us how the old men could cut the rock, seeing that we found it so hard and unyielding. It was dynamite, and dynamite. Yesterday I saw the rock very soft, but could find no jumper marks. This morning, however, the rock is the steepest; it is evident they broke the hard rock with fire, and then they had to take the water and ore to surface from a depth of nearly 40 fms.; the inference is the lode must have been rich to have paid them, supposing that they worked for their food only. The 55 tons that we treated last month had an average value of 1 oz. 6 dwts. 6 grs. per ton of stone. So as we have cut it in two halves, I am not yet able to give you an idea of its extent. We have drawn up a new plan, and will start at the bottom of the mine this week; the assay value is 1 oz. 17 dwts. 13 grs. per ton of rock. The ground at several places is rather tight for cutting, and the progress will appear to be slow, but we have got the mine into a good state of working. The railroads and the arrangements for winding the ore answer very well, and we have just completed the renewal of timber in Taylor's shaft from surface to the 70. Stamp ing machinery is going on well, and the ore is treating in low grade, but the couple of weeks or so we shall be able to start the mill at the bottom of the shaft, and I will do all I can to get as much gold this month as we did last.

NERBUDDA COAL AND IRON.—J. A. Maughan, July 15: In placing before you my progress report for the month of June, though owing to the closing of the old fire workings for the season, and also to bad attendance of men on account of the commencement of the rains, which always prevent the regular attendance of our free village men, our output has not come up to that of previous months, still it will be a fair one, and certainly the corresponding month of last year, and I trust that the state of affairs for the half-year ending June 30, will give satisfaction to both the directors and shareholders. The output for the month of June amounts to a total of 2387 tons 5 cwt. 1 qr. 22 lbs., of which 2171 tons 1 cwt. 1 qr. 22 lbs. were sales, and 216 tons 4 cwt. were used for colliery consumption. Compared with the corresponding month of 1883, the consumption of our fuel was 12,000 tons for the month of 789 tons 16 dwts. 9 grs., or an increase of 807 tons 3 cwt. 1 qr. 10 lbs. Colliery production in the colliery consumption of 6 tons 7 cwt. This being the end of the half-year I may also show how the total of the half-year compares with that of the corresponding half-year of 1883. For the half-year ending June 30, 1883, the total output amounted to 9577 tons 8 cwt. 2 qrs., against a total for the half-year ending June 30, of 18,845 tons 13 cwt. 1 qr. 9 lbs., or an increase of 9268 tons 5 cwt. 1 qr. In favour of 1884. This increase is due to that of shows a total increase of £3340 tons 19 cwt. 1 qr. 10 lbs. In the coal more than double the sales of the half-year ending June 30, 1883, and in the colliery consumption a decrease of 72 tons 14 cwt. 3 qrs. These figures show a total increase in revenue from sales of £4,527 rs. 6 a. 11 p., and a saving in colliery consumption of 654 rs. 10 a. 4 p.—No. 2 Shaft: There has been considerable difficulty in keeping

For we have been nble to get through, and which has been designated as "supposed edge of basin," but which I am still inclined to think is a heavy downward throw. A drift was put into this fault, and the leader was followed for it again, thickened so much that we thought we had again got the coal. But it again, though, could not be run out altogether after the drift was driven about 25 yards, and it was then that we, but supposed to try and prove it again, when we reach the Helen Pit workings, as some change may take place in it further east, as it is evident that the first fault and this fault run together. Again, our north-east faces have been very much impeded by a series of rolls, but the last roll is looking better, and this, I think, is the main one, and through it we have now about 3 ft. of coal, and the coal is thickening daily. Between the two respective rolls the coal has been thin, varying from 18 in. to 2 ft. 6 in., and, in fact, it is just a thinning of the roll, which we are now, however, successfully through. It will be seen by reference to the plan that we shall probably meet another fault, and that a heavy one, before we get into clear ground northwards from the Helen, but if the fault I expect continues to run in its present course, there will be a fair area between it and the rolls we have just got over. The worst feature of the faults here is that they are never before one came to two places, so that even when one has been through it, before one can get to the next, they will be found under different circumstances. The faces of all the No. 1 shafts, and the No. 2 shaft, in time by the drifts from the Helen in the No. 2 seam, but so little of the No. 1 seam, and 3 and 4 have been worked from No. 2 shaft, but these seams at the Helen may be considered virgin coal in all directions even westward—Helen Pit: Sinking was commenced again at this pit on June 3, and by June 29 the sinking had reached a depth of 20 ft., and three cribs and a ¼ crib had also been put in, leaving the No. 2 shaft deep enough sufficient for a pump or water to be brought in as far as the Special shaft, and the sinking will be continued to enable walling between the Nos. 1 and 2 seams to be gone on with, and cage buntons for the west side will be put in with the walling, and when the walling is finished the cage guides will be commenced with on the west side. Twenty-six men per shift, that is 78 men in the 2½ hours, can now be placed in the No. 1 seam, Helen Pit, and by the time the west cage is in this number will be increased, so that the drifts will be working with our 400 tons per month. The drifts will be worked as the pillars left complete in the Helen. The pillars will increase more rapidly, as the pillars left will not be so large, and, consequently, more places will be turned away.—New Bridge: Three of the founds of this bridge were built up to the level of river bed before the moons broke, and the fourth was built to 2 ft. above river bed, this pillar being nearly in the middle of the river, we shall be able to notice the effect of floods in it.

NEW POROSI, 4 ft. Provis, July 11. Atwood's Shaft: No. 2 drift has been sunk, and the drift is 4 ft. 6 in. the vein carries visible gold. No. 3 drift has been driven 4 ft. only: vein still small. In consequence of the pump (the lower one) breaking down we were flooded here some five days, as the water is very quick. Everything is however, to-day working well, and we shall recommence to-night. The pay-shoot dips west faster than was apparent from drifts Nos. 1 and 2; but we may strike it in No. 3 at any moment. Air-shaft No. 1 east has been driven 29 ft., and bids fair to get into good quartz, as several tons have been raised of gold; the vein is 1 ft. 6 in. wide, and the quartz is poor. The drift is 30 ft. in the vein is 6 ft. wide, but the quartz is poor. Our principal object with this work is to accelerate ventilation in the pump shaft at Atwood's, so as to reduce the intense heat caused by the steam.—Soriven's Shaft: The new derrick has been completed now some days. The actual working result may be explained thus:—In eight hours the same number of trucks are hoisted and conveyed to the mill as was before in 24 hours, or, in plain words, what used to cost us \$3 now costs \$1. We were in a position to get the emergency we can supply to rail down from this shaft alone. A spacious plot for a mill has been cleared at the side of the shaft has been cut, and a track laid to the head of the drift. This will reduce our

passade account. am more than desirous of sinking Scriven's and an Attwood's, as I firmly believe that we shall find the quartz better and more regular in quality as we go deeper. With regard to the productiveness of the quartz, Attwood's gives the best results at present. Keeping the quartz separate from the various shafts, and crushing in a separate battery, I find the yield at present as follows:—Attwood's, 10 to 1½ cwt. per ton; Scriven's, 7½ cwt. per ton; air, 5 to 1½ cwt. per ton. But, in the latter case, I find that every week, as when a rich pocket is struck the mill for a day or two will show a result of even 2 or 3 cwt. per ton, and again for several days show only ½ oz. or ¾ oz. I explain this that you may properly understand the character of the vein near the surface, as we are at present.

The machinery is in good order. The English Cameron pump is running well at Del Dante, although from the fact that there is a discharge hole only on one side we had to change our pipe columns. You are aware that we have to pump water up to the top of the shaft. Every possible economy is exercised in all parts, and all the improvements which have been made have a direct bearing or influence to reduce the cost per ton of quartz, or facilitate the treatment of larger quantities of rock. These two points—cheap production and treatment of large quantities—are the bases of all our plans, as success obtained in this way will be more permanent than if obtained by a rich bunch of high grade quartz. Of course when the mine is more extensively developed, the costs per ton will be less than they are now."

DEL DANTE GOLD.—The produce for July was 1250 oits. gold, worth, at \$8.6d. per oit, £101.

PORT PHILLIP AND COLONIAL GOLD.—R. Bates, June 12: No. 13 or 1190 ft. Level, Western Lode: The rise at the north of the drive is now up 16 ft.; lode is still disordered, but has a well-defined footwall, and is still making a good deal of water at the north end of the rise.—No. 11 or 990 ft. Level, Western Lode, Nos. 1 and 2 Winzes: The tributaries are driving and stoping, stone barely payable. No. 3 winze is now down 115 ft., stone poor at present. A winze plant is being cut at the bottom, when completed sinking will be resumed. Better results are being obtained in, gold being freely seen. No. 4 winzes will be resumed shortly.—Old Man Lode: The drive going south of the main north cross-cut is now in a distance of 689 ft., stone poor. This drive has been stopped for the present, and a rise commenced; hope to get better stone shortly. Have commenced breaking out stone from new eastern vein near the north boundary, stone looking very well.—No. 10 Level, or 890 ft. Level, Old Man Lode: The drive going south into the Criterion ground has been resumed, and is now in a distance of 55 ft., width of lode 2 ft. 6 in., stone payable.—No. 9½ Level, Old Man Lode: The tributaries are driving an intermediate level, stone looking very well at present. The drive going south is now down 8 ft. 6 in. to 69 ft. ft. Level, Old Man Lode: The drive going north has been extended to a distance of 302 ft., total, 302 ft.; stone poor. Have commenced a rise, and hope to reach payable stone soon.—No. 5 or 144 ft. Level, Old Man Lode: The drive going north is in a distance of 123 ft., stone poor. This drive has been stopped for the present.—No. 4 or 374 ft. Level, Robinson's Lode: The drive north is in a distance of 98 ft., stone looking well at present.—No. 3 or 300 ft. Level, Robinson's Lode: A party of tributaries have begun driving south for a block of stone left many years ago.—South Shatt, No. 3 or 300 ft. Level, Robinson's Lode: The tributaries are getting payable stone north of the main cross-cut, where they are driving at the present time. All the drifts are principally prospecting. All the underground works are in good order. Preparations are being made for getting the new blower to work.

—June 30: Total quartz crushed for the month ending June 11, 2013 tons; total gold obtained 482 oits. 1 dwit. 12 grs.; average per 4 dwts. 15 grs.; receipts for gold sold obtained from tributaries 1234s. 8s. Payments (including 2356, 10s. paid for firewood, and 1207, 2s. 1d. paid for new blower and pipes) 14962, 10s. 10d. 7s. 2d. 2587, 2s. 10d.; balance carried forward to next month's account, 4937, 2s. 6d. credit.

DEL DANTE BARBARA GOLD.—The produce for July was 2520 oits. of gold, worth at \$8.6d. per oit., 10821, 10s.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro Aug. 11: Produce for the month of July, 18,500 oits.; value, 7169s. Yield 3½ oits. per ton.—Cuiabá: 1750 tons stamped; yield, 14½ oits. per ton.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

CARDIFF AND NEWPORT PATENT FUEL COMPANY, ARROW BRAND (Limited).—Capital 25,000*l.*, in shares of 10*l.*. To carry on at Newport, Mon., and elsewhere, the business of makers, manufacturers, buyers, sellers, and shippers, of patent and other fuel. The subscribers (who take one share each) are—J. Fry, Penarth; O. H. Riches, Cardiff; A. T. Simonds, Llandaff; J. W. Pyman, Penarth; A. J. Stevens, Newport; C. M. Jacobs, Penarth; A. Holman, Penarth.

THE PARA CENTRAL SUGAR FACTORY COMPANY (Limited).—Capital 88,750*l.*, in shares of 10*l.*. To acquire a concession for establishing and carrying on a sugar manufacturing business in the Empire of Brazil. The subscribers (who take one share each) are—J. Walter, 34, Leadenhall-street; J. H. Wicks, 38, St. Luke's-road; C. F. Gundtorg, Wimbledon; L. H. Marks, 34, Colville-square; F. R. Rowe, 39, Huddleston-road; R. W. Buss, 13, Alexander-road; C. J. Collins, Hampstead.

EMERSON, WALKER, AND THOMPSON BROTHERS (Limited).—Capital 36,000*l.*, in shares of 20*l.*. To acquire and carry on an engineering business situated at 11, Leadenhall-street, London; Winlaton, near Blaydon-upon-Tyne; and Dunston, county of Durham. The subscribers (who take one share each) are—E. Walker, 11, Leadenhall-street; G. Thompson, Winlaton; J. Thompson, Newport; E. J. Byres, 11, Leadenhall-street; H. Escott, 11, Leadenhall-street; A. Smith, East Dulwich; A. W. Gillett, Edmonton.

THE INVICTA INVESTMENT COMPANY (Limited).—Capital 20,000*l.*, in shares of 10*l.*. To acquire, deal in, sell, or otherwise dispose of, property, houses, tenements, &c. The subscribers (who take one share each) are—G. Hulband, Maidstone; F. King, Maidstone; J. McVitie, Maidstone; W. Cox, Maidstone; S. H. King, Maidstone; H. A. Hughes, Maidstone; W. Cox, Maidstone.

THE LANCASHIRE STEAM COMPANY (Limited).—Capital 100,000*l.*, in shares of 10*l.*. The manufacture and applying of gas for the supply of light, power, and steam to such factories and other works, that are not collieries or ironworks, in Lancashire. The subscribers (who take one share each) are—W. Morris, 24, Hollydale-road; J. Bartholomew, Leyton; G. W. Peacock, Mile End; F. G. Young, 6, Anerton-street; C. T. Ferry, Upton Park; W. Amies, Croydon; A. H. Barrett, New Southgate.

THE LLYWYD GRAGOLA COLLIERY AND BRICK COMPANY (Limited).—Capital 40,000*l.*, in shares of 10*l.*. To purchase or otherwise acquire, hold, and work collieries, mines, minerals and mining rights in South Wales and elsewhere, and in particular a certain colliery and stone quarries situated in the Swansea Valley, this property comprising about 14 acres, and the stock, plant, machinery, implements, and effects belonging thereto. The subscribers (who take one share each) are—D. O'Sullivan, Swansea, merchant; T. R. White, Ystalyfera, engineer; D. R. Stephens, Swansea, colliery agent; J. White, Ystalyfera, M.E.; D. Davies, Swansea, accountant; W. G. Fay, Swansea, gentleman; D. L. Rees, Clydach, colliery proprietor.

THE ILLKEY WELLS HYDROPATHIC COMPANY is re-registered, and becomes incorporated under the Limited Companies Liability Acts.

"ANCHOR" SHELTER WORKS (Limited).—Capital 30,000*l.*, in shares of 10*l.*. To acquire of the Bagillt Zinc Smelting Company (Limited) certain smelting-works situated in the county of Flint, and to continue the business in connection therewith. The subscribers (who take one share each) are—J. M. Gibbs, Liverpool; J. B. G. Peters, Liverpool; T. Holden, Barnley; R. W. Williams, Kirkdale; T. Weaver, Liverpool; E. R. Hartwright, Liverpool; C. Pearson, Bootle.

THE BARROW MINING COMPANY (Limited).—Capital 25,000*l.*, in shares of 10*l.*. To acquire by purchase or otherwise mines and mineral properties and hereditaments, in Cumberland or elsewhere, or any rights, interests, or privileges in any mines, lands, &c., for the purpose of carrying on the various operations connected with mining, getting, and selling of lead, silver, blende, calamine, and other ores and minerals. The subscribers (who take one share each) are—R. W. Williams, Kirkdale, agent; J. B. G. Peters, Liverpool, jeweller; J. S. Elmslie, Liverpool, manager; E. R. Hartwright, Liverpool, accountant; W. Hillme, Liverpool, tailor; C. Pearson, Bootle, printer; W. S. Cook, Liverpool, engraver.

THE LONDON AND CASSELMAN LUMBER COMPANY (Limited).—Capital 50,000*l.*, in shares of 10*l.*. The buying of timbered land in Canada, manufacturing and selling the timber, and cultivating and selling the land, &c. The subscribers (who take one share each) are—J. F. Hall, Hamilton; J. Bradley, Hamilton; P. Parsons, Bath; D. Towers, Clayton-le-Moors; A. Blenkham, Blackburn; T. Griffith, Manchester; H. S. Harris, New Cross.

THE MAINDY STEELWORKS (Limited).—Capital 20,000*l.*, in shares of 10*l.*. To purchase or otherwise acquire certain works situated near Cardiff, and to carry on the business of a steel manufacturing company in all branches. The subscribers (who take one share each) are—W. Jenkins, Maindy; A. G. Warren, Peckham; J. Lowe, South Hampstead; A. Kingsbury, 218, New Kent-road; A. Snellgrove, Wandsworth; J. Milne, 9, Bush-lane; J. Banks, 25, New-street.

THE NEW PATENTS DEVELOPMENT ASSOCIATION (Limited).—Capital 10,000*l.*, in shares of 10*l.*. To acquire, use, vend, or otherwise deal in patents, licenses, concessions, &c. The subscribers are—J. J. Hunter, 21, St. Dunstan's Hill; J. T. Lacey, 10, Buckingham-street; W. H. Pingleton, 63, Tooley-street; F. Foxby, 26, Leicester Terrace; C. J. Singleton, 8, Staple Inn; W. C. Pritchard, South Norwood; J. J. Bissell, 29, Ambler-road; S. Hayworth, Kingsland.

SOHAM AND DISTRICT GAS COMPANY (Limited).—Capital 50,000*l.*, in shares of 10*l.*. To manufacture, sell, and supply gas for lighting, heating, and motive power in the parishes of Soham, Fordham, and Burwell, Cambridgeshire. The subscribers (who take one share each) are—C. Turner, Cambridge; A. Williams, Southwark; R. Berridge, 181, Bishopsgate-street Without; W. Liddall, Moorgate-street Chambers; A. Glaige, 5, Crossley-street; J. A. Schutz, Brockley; F. W. Turner, 31, Essex-street.

LONDON AND SOUTHERN COUNTIES HOUSE AND ESTATE COMPANY (Limited).—Capital 300,000*l.*, in shares of 10*l.*. To acquire land, and carry on the businesses of builders, contractors, timber merchants, brick and tile manufacturers, slate and stone quarries, lime burners, &c. The subscribers (who take one share each) are—H. A. Trevanion, 19, St. George's-terrace; G. W. Constable, 13, Crawford-street; J. V. Thomas, Horsham; M. Lewin, 19, Weymouth-street; W. Scott, 8, Somerset-street; S. G. Forather, 19, Parliament-street; J. H. Hammond, Roselea.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine share-dealer, Redruth (Aug. 14), writes:—We have had more sellers in our market this week, and there has not been quite so much doing. Dolcoath has fallen 1*l.*. South Crofty 4*l.*, South Frances 4*l.*, and Tincroft 2*l.*. To-day market is steady, with West Frances, Dolcoath, and Tincroft in chief request. At East Pool meeting on Monday there was a very good report, and a 2*l.* dividend. Subjoined are the closing quotations:—Carn Brea, 4 to 4*l.*; Cook's Kitchen, 9*l.* to 10*l.*; Dolcoath, 12 to 13*l.*; East Pool, 42 to 43*l.*; Killfret, 6*l.* to 6*l.*; New Cook's Kitchen, 1 to 1*l.*; New Killy, 1 to 1*l.*; North Bury, 1*l.* to 2*l.*; Pen-an-dren, 4 to 4*l.*; Polberro, 1*l.* to 2*l.*; South Croft, 3 to 3*l.*; South Croft, 3 to 3*l.*; West Frances, 5 to 5*l.*; West Killy, 11 to 11*l.*; West Seton, 4 to 4*l.*; Wheal Agar, 10 to 11*l.*; Wheal Bassett, 3 to 3*l.*; Wheal Grenville, 6 to 6*l.*; Wheal Pevor, 4 to 4*l.*; Wheal Killy, 4 to 4*l.*; Wheal Coates, 2*l.* to 2*l.*.

—Messrs. ANNOTT and WICKETT, stock and share brokers, Redruth (Aug. 1) writes:—The market has been very quiet this week. Tincrofts have varied considerably, closing at 9*l.*. At East Pool 20*l.* dividend, and report very good. Dolcoath quiet pending Monday's meeting; 30*l.* dividend expected. Closing quotations herewith:—Camborne Vein, 4 to 4*l.*; Carn Brea, 3 to 3*l.*; Cook's Kitchen, 9 to 9*l.*; Dolcoath, 12 to 12*l.*; East Pool, 42 to 42*l.*; Killfret, 6 to 6*l.*; New Cook's Kitchen, 1 to 1*l.*; New Killy, 1 to 1*l.*; North Bury, 1 to 1*l.*; Pen-an-dren, 4 to 4*l.*; Polberro, 1 to 1*l.*; South Croft, 3 to 3*l.*; South Croft, 3 to 3*l.*; West Frances, 5 to 5*l.*; West Killy, 11 to 11*l.*; West Seton, 4 to 4*l.*; Wheal Agar, 10 to 11*l.*; Wheal Bassett, 3 to 3*l.*; Wheal Grenville, 6 to 6*l.*; Wheal Pevor, 4 to 4*l.*; Wheal Killy, 4 to 4*l.*; Wheal Coates, 2 to 2*l.*.

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—Mr. M. W. BAWDEN, Liskeard (Aug. 14), writes:—The mining market is less active than usual, owing to the settlement, which has been the heaviest experienced for some considerable time past, indicating a greater amount of confidence and further advance in price on most dividend and good progressive stock. Cook's Kitchen and Tincroft lower. Marke Valley, Pen-an-dren United, St. Just United, South Croft, and Wheal Agar in demand. Subjoined are the closing quotations:—Anderton United, 3 to 3*l.*; Bedford United, 1 to 1*l.*; Carn Brea, 3 to 3*l.*; Cook's Kitchen, 9 to 9*l.*; Dolcoath, 12 to 12*l.*; Devon Consols, 2 to 2*l.*; East Croft, 3 to 3*l.*; East Pool, 42 to 43*l.*; Killfret, 6 to 6*l.*; Marke Valley, 4 to 4*l.*; Old Gunnslake, 3 to 3*l.*; Phoenix United, 2 to 2*l.*; Prince of Wales, 4 to 4*l.*; South Croft, 3 to 3*l.*; South Croft, 4 to 4*l.*; South Devon United, 3 to 3*l.*; South Frances, 7 to 7*l.*; St. Just United, 6 to 6*l.*; Tincroft, 8 to 8*l.*; West Basset, 2 to 2*l.*; West Croft, 3 to 3*l.*; West Frances, 4 to 4*l.*; West Killy, 11 to 11*l.*; West Orebor, 1 to 1*l.*; West Phoenix, 4 to 4*l.*; Wheal Agar, 10 to 11*l.*; Wheal Crebor, 1 to 1*l.*; Wheal Grenville, 6 to 6*l.*; Wheal Killy, 4 to 4*l.*.

—Mr. JOHN CARTER, mine shareholder, Camborne (Aug. 14), writes:—The share market has been a little more active this week. Tincrofts after declining to 8 have recovered to 9 buyers. Dolcoaths also fell to 7*l.*, but have recovered to 7*l.* 7*l.*. At the meeting on Monday a dividend of 30*l.* is generally expected. Wheal Agor is in demand at 5*l.* on a good lode being cut into the slide in the rise above the 174, the slide having heaved the lode over 10 fms. Wheal Unys are in demand at a few shillings on a reported improvement. Subjoined are the closing quotations:—Carn Brea, 3 to 3*l.*; Cook's Kitchen, 9 to 9*l.*; Dolcoath, 12 to 12*l.*; East Pool, 42 to 42*l.*; Killfret, 6 to 6*l.*; New Cook's Kitchen, 1 to 1*l.*; New Killy, 1 to 1*l.*; South Croft, 3 to 3*l.*; South Croft, 3 to 3*l.*; West Basset, 2 to 2*l.*; West Frances, 5 to 5*l.*; West Killy, 11 to 11*l.*; West Orebor, 1 to 1*l.*; West Phoenix, 4 to 4*l.*; Wheal Agor, 10 to 11*l.*; Wheal Crebor, 1 to 1*l.*; Wheal Grenville, 6 to 6*l.*; Wheal Killy, 4 to 4*l.*.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, share-brokers, Queen's Chambers, Market-street (Aug. 14), write:—Nothing has occurred during the past week to counteract the usual indisposition to enter largely into fresh engagements on the eve of the settlement; indeed, until the completion of the account the influences were nearly all the other way. Stock proving scarce has had the effect of steadying prices somewhat; but up to this becoming apparent lower figures were the rule, no encouragement being provided by returns of railway takings or the Bank statement. Foreign Government loans, with the single exception of Egyptians, are more or less improved in value. Argentine Public Work Bonds being 5*l.*; Mexican Three per Cent., 4*l.*; Portuguese, 4*l.*; Italian, 4*l.*; Russian, 4*l.*; and Turkish, 4*l.*; Egyptian United, 1 to 1*l.*; ditto, 1 to 1*l.*; Daira Sanieh, 1 to 1*l.*; and ditto, 1 to 1*l.*; lower. Colonial Government Bonds all show upward movement where change is recorded. Canada 4 per Cent. are only partially altered—a rise of 1 on buyers' quotations, sellers' figures remaining unaltered. Higher: New Zealand 5 per Cent. Consols, 1 to 1*l.*; and 1*l.* each in New South Wales 4 per Cent. Inscribed, Cape of Good Hope 5 per Cent., South Australian 4 per Cent. Inscribed, and Victoria Inscribed 4 per Cent. Corporation Stocks are little changed. They are very firm all round, and a rise of 1*l.* marked in Manchester 3*l.* per Cent. Mexican railways rallied sharply early this week, and owing to the trade returns being better than was generally expected, the improvement is maintained. On the week they were generally 3*l.* per Cent. Miscellaneous, viewed *en bloc*, are quiet, the only class in which any activity is displayed being Telephones, all of which are better where moved.

BANKS very quiet, little but solitary dealings being marked, balance of alterations rather adverse, but the changes are very slight. Higher: Manchester and County, 4 to 4*l.*; and Parr's, 4 to 4*l.*; Lower: Union of Manchester, 4 to 4*l.*; Lancashire and Yorkshire, 4 to 4*l.*; Liverpool Commercial, 4 to 4*l.*; and Manchester and Salford, 4 to 4*l.*.—INSURANCE shares provide but a meagre business, and prices realised call for no remark. Quotations have received some attention, with the following results:—Higher: National Boiler, now ex div., 4 to 4*l.*; Sea, 4 to 4*l.*; Boiler Insurance and Steam Power, 4 to 4*l.*; Royal Liverpool, 4 to 4*l.*; Liverpool and London and Globe, 4 to 4*l.*; Lancashire and Yorkshire Accident, 1*l.* 6*l.* (amount of dividend); and Queen, 1 to 1*l.*; Lower: Thames and Mersey, 4 to 4*l.*; Lancashire, 4 to 4*l.*; and Maritime, 4 to 4*l.*. Sellers of English and Scottish Boilers have asked 1*l.* of price they asked a week ago, as also have sellers of Manchester Fires.

COAL, IRON, & C. AND MINING.—Nothing but desultory dealings going on. Movements in prices do not present any great feature, except the falling off in prices for coals, &c. Higher: John Brown, 1 to 1*l.*; Telegraph Construction and Maintenance, 4 to 4*l.*; Great Laxey Lead, 4 to 4*l.*; and Sharp Siewarts, 4 to 4*l.*.—Lower: Panellio Copper, 4 to 4*l.*; Tharsis, 4 to 4*l.*; Park Gate Iron, 4 to 4*l.*; Sheepbridge Coal, &c., 4 to 4*l.*; Staveley Coal, &c., 4 to 4*l.*; Ebbw Vale, 4 to 4*l.*; and Llynvi and Tondur Preference, 4 to 4*l.*.

COTTON SPINNING, &c.—Shares do not rally at all, figures still tend in buyers' favour. TELEGRAPHES: Beyond a rise of 1*l.* in West Indian and Brazilians, and a fall of 1*l.* and 1*l.* respectively in Anglo Ordinary and Pref., show no change of moment. TELEPHONES still better on prospects of more generous treatment. United, National, and Lancashire and Cheshires all marking higher figures. MISCELLANEOUS: Gas Light and Coke, A, again decidedly higher, nothing else worth naming.

RAILWAYS.—There has been a disposition to realise during the week, and with one or two exceptions prices are easier. The Bank Return had its influence in inducing sales, and traffic were generally disappointed for further disposing easing of open accounts for rise. The settlement again proved stock short, especially North-Eastern; and, as has been the case for months, heavy backwardations had to be paid on this stock, but the advice given from London to buy in at big returns is nonsense. The heavy lines are again prominently in request, and those most pressed, such as Great Eastern and Scotch lines, are quoting firmer again. Canadians, under the influence of a surprisingly good traffic return opened remarkably higher, and though the best is not quite maintained the closing is firm. Americans have tended downward most of the week, but to-day, and especially this evening, the tone is firmer.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, stockbroker and ironbroker (Aug. 14), writes:—During the past week markets have been uncertain, owing to the dull state of the metal market. The Board of Trade Returns for July show no particular alteration; but if the harvest continues to turn out well it should make trade more active.

In shares of coal, iron, and steel companies, the principal alteration is an advance on Steel Company of Scotland shares to 7*l.* 16*l.* 3*l.*, owing to the dividend announcement at 7*l.* per cent. Marbella have been sold from 5*l.* to 5*l.* 6*l.*, and the mine reports are favourable. Cardiff and Swansea are 42*l.* 6*l.* to 47*l.* 6*l.*, and West Cumberland 4*l.* to 5*l.*.

In shares of foreign copper and lead companies the principal alteration is a decline in Panellio to 3*l.*, on the announcement that no dividend will be paid this year. Arizone has improved to 2*l.* 10*l.* to 2*l.* 12*l.*. Large production of copper at the mine. Tharsis have been sold from 6*l.* 5*l.* to 6*l.* 10*l.* 6*l.*. Lake Superior are 5*l.* 5*l.* to 5*l.* 9*l.*. Senteis, 1*l.* 6*l.* to 1*l.* 8*l.*; Taurus Silver-Lead (preference), 2*l.* 6*l.*; and Teocapilla, 2*l.* 6*l.* to 2*l.* 8*l.*.

In shares of home mines business is quiet. Glasgow Caradons have improved to about 3*l.*. Devon Consols are 5*l.* to 6*l.*; Devon Friendships, 1*l.* 6*l.* to 2*l.*; East Blue Hill, 4*l.* to 4*l.*; Ectons, 17*l.* 6*l.* to 20*l.*; East Wheal Rose, 7*l.* 6*l.* to 8*l.*; East Van, 3*l.* 9*l.* to 4*l.*; Gorse and Merilyn, 5*l.*; Gunnslake (Clitters), 9*l.* to 11*l.*; Kile Hills, 2*l.* 6*l.* to 2*l.* 8*l.*; Leadhills, 3*l.* 6*l.* to 3*l.* 8*l.*; Mounts Bay, 2*l.* to 2*l.*; New Caradon, 1*l.* 6*l.* to 2*l.*; North Blue Hill, 1*l.* 6*l.*; Old Shepherd, 9*l.* to 9*l.*; South Darren, 3*l.* to 3*l.*; St. Just United, 5*l.*; Trevelance, 30*l.* to 35*l.*; Tincroft, 9*l.*; Trevelance, 4*l.* to 5*l.*; Trebartha Lemanne, 1*l.* to 2*l.*; Tregentons, 2*l.* to 3*l.*; West Orebor, 1*l.* to 2*l.*; West Killy, 11*l.* to 11*l.*; West Phoenix, 4*l.* to 4*l.*; West Holway, 2*l.* 6*l.*; and Wheal Jane, 1*l.* 6*l.*.

In shares of gold and silver mines there has been more business doing. Montanas have been sold from 37*l.* 3*l.* to 42*l.* 6*l.*. Richmonds are steady, but United Mexicos are lower. Ontario Silver offered, and Javali Debentures wanted. African Gold Consols are 8*l.*; Antioquia, 2*l.* 6*l.* to 3*l.*; Almada, 5*l.* to 5*l.*; Balkis, 9*l.* to 11*l.*; Chontales, 3*l.* to 3*l.*; Cartago, 4*l.* to 5*l.*; Candim Damo, 2*l.* 6*l.* to 3*l.*; Callao Bis, 2*l.* 6*l.* to 3*l.*; Chile, 3*l.* 6*l.* to 4*l.*; Rio Pedro, 2*l.* to 3*l.*; Eschquer, 1*l.* 6*l.*; Gold Coast (preference), 12*l.* 6*l.*; Glenrock (new), 1*l.* 6*l.* to 2*l.* 6*l.*; Isabelle, 2*l.* 6*l.*; I.X.L., 1*l.* 3*l.*; Kapanga, 2*l.* 6*l.* to 3*l.* 6*l.*; Kimberley North Block, 37*l.* 6*l.* to 42*l.* 6*l.*; Kolobor, B, 2*l.* to 3*l.*; New Potosi, 9*l.* to 11*l.*; New Emmas, 9*l.* to 11*l.*; Organos, 14*l.* to 15*l.*; Oriza, 2*l.* to 2*l.*; Oscar, 12*l.* to 12*l.*; Pastarena, 1*l.* to 2*l.*; Port Phillip, 1*l.* to 2*l.*; Rio de Janeiro, 1*l.* 3*l.*; Santa Barbara, 10*l.* to 12*l.*; Tecoma, 1*l.* to 2*l.*; Victoria, 2*l.* to 3*l.*; and West Callan, 2*l.* to 3*l.*.

In shares of oil and miscellaneous companies prices are steady. Elmore and Company debentures are 4*l.*; Home Mines Trust, 12*l.* to 14*l.*; Lewes Chemical, 4*l.* to 5*l.*; Young's Paraffin have declined from 11*l.* 16*l.* 3*l.* to 11*l.* 10*l.*.

EDINBURGH.—Messrs. THOS. MILLER and SONS, stock and share brokers, Princes-street (Aug. 13), write:—Home Railway stocks, after being strong for a time, have gone weak to-day on the publication of the traffic returns. During the week Canadians, &c., have been very much depressed, and show a considerable decline, and the same remarks apply to Americans. Prairie Cattle shares show a decline of about 5*l.* to 8*l.* 3*l.* on each issue. Swan Land and Cattle have been in demand at higher prices. Arizona Copper have crept up about 2*l.*. In Oil shares Lunark have fluctuated violently on unfavourable news. At one time the price touched 5*l.* 6*l.* for the new account, or 18*l.* 6*l.* under the closing price of last Wednesday. Midlothian show a small rise. Pumphurston have been in demand at better prices, and Young's Paraffin show a small improvement.

THE OWEN VRAN AND TREGURTHA DOWNS MINES.—These mines sold on August 7, 11 tons 17 cwt. 1 qr. 26 lbs. of tin ore for 603*l.* 5*l.*, the first month's actual stamping of the four Husband's oscillating stamps. Owing to the unfinished state of the dressing-floors and calcliner the stamps have been restricted to half-duty. The calcliner and floors are being rapidly completed, and when finished the sales are expected to average 30 tons per month. At a recent 24 hours' trial the four oscillating stamps crushed 93 tons 16 cwt. of ordinary lodestuff. The coal consumed was 4 tons 3 cwt., but as the boilers and steam-pipes are still naked it may be reasonably assumed that when clothed a saving in the consumption of coal will be effected.

Mining Correspondence.

BRITISH MINES.

BEDFORD UNITED.—H. Tresise, Aug. 12: North Lode. The drive in 138 east is by the side of the lode to secure progress. McCollan's Shaft, No. 1 Lode. In the 7*l.* east the lode is looking promising, producing a little quality ore, and letting out water freely. In the same level west the lode is 3*l.* wide, and of a very promising character. In the 62 east the lode is 3*l.* wide, composed of strong capels, muddle, and ore of a promising character. Two pitches behind the end will produce 2 tons of ore each, and worth per fathom. The lode is not taken down in the 62 west; the ground is favourable for progress and also very congenial for the production of copper. Two slopes behind the end are worth 5*l.* per fathom each, or 1*l.* 1*l.* ton of ore. Three pitches are the end 5*l.* per fathom each, or 2 tons of ore. The back of the drive is continued by the side of the lode. Two slopes in the 2*l.* west are worth 5*l.* and 10*l.* per fathom each or 2 tons and 3 tons of ore. In the bottom of the 42 are worth 6*l.* per fathom, or 2 tons of ore. Three pitches west at the 42 will yield 2 tons of ore each, or 5*l.* per fathom.

CARN CAMBORNE.—W. C. Vivian, August 14: I have dined the 105 fms. levels on the south lode, and find that the latter level is a little above under the wine sinking under the 95 (about 2*l.* fms.), and I have taken the sumpers from the crosscut and placed them in the wine end, in order to communicate with the wine as quickly as possible. On object being effected, we shall be in a much better position for exploring part of the mine.

CASHWELL LEAD.—John Peart, Aug. 9: The heading next to the drift head in copper lead going west is yielding some very good ore in the lower part, and has fair good ore up to the top of all, but not so rich as in the lower part worth 1 ton of ore per fathom. The heading coming east on this stratum some nice ore at the top of all; we have not done much at the low part the fortnight, but will average 1*l.* ton of ore per fathom all the height. The drift going west is looking rather better; a little more spar, but not more ore. The vein in drift going east on the above stratum is about the same as last reported, about 12 in. wide, with pieces of ore mixed in the spar, have sampled this week 60 tons of lead ore for sale on Aug. 15.

CATHEDRAL CONSOLS.—S. Davey, S. Davey, jun., Aug. 12: We are pleased to say that good progress is being made in driving the 84 cross-cut south, lode in the 84 west of cross-cut No. 2 is as good as when reported for the 84, or rather better in appearance. We have resumed the driving of the 84, and the men are making good progress, and preparatory work, repairs, the level, &c. On the whole prospects encouraging.

DEVON FRIENDSHIP.—F. R. W. Daw, Aug. 14: The setting reported to be sent to you next week. All the points underground are looking well, arsenical muddle, and we are breaking some very good copper ore from a vein in the back of the 42 west.

DEVON GREAT CONSOLS.—I. Richards, Aug. 14: Wheal Maria: Eastern progress is being made in cutting down the adit shaft, and we hope to reach the bottom of the adit in the course of another week. Wheal Enma, New South Lode: In Vigors's mine, the bottom of the 225 west, the lode maintains its large size, from 8 to 10*l.* wide, and is of a promising character, being composed of capel and quartz, with peach, some saving work of ore, and 3 tons of muddle per fathom. In consequence of an influx of water, work has for the present been suspended. It is hoped, however, that on coming into the lode at the 220 the water will be drained to that point, when all will again be resumed. Railway Shaft: In the cross cut south (Bray's) at 220 the ground is of rather a troublesome nature for exploration, the kinked and faulted nature of the strata, and the fact that the lode is at the bottom of the ground continues favourable for progress, and is congenial for the production of mineral. Watson's: In the 112, west of the engine shaft, the lode is 5*l.* wide, yielding 2 tons of copper and muddle ore per fathom. In the western end, sinking below the 32, the ground is favourable for exploration, and of a general character for the production of mineral. In the 32, east of the engine shaft, the lode is 3*l.* wide, yields some saving work for copper and muddle. The other points of operation throughout the mines are without important alteration.

DEVON GREAT UNITED.—Isaac Richards, Aug. 14: In the 120, east of the shaft, the lode is 4*l.* wide, of a strong, mottled character, and yielding good stones of copper and muddle ore. The distance driven during the past month is 1*l.* 1*l.*. In the 120, west of Willesford's shaft, the lode is 4*l.* wide, also of a promising character, and yielding good stones of copper and muddle ore. The distance driven during the past month is 1*l.* 4*l.*. In the 104, west of Willesford's shaft, the lode is 1*l.* 1*l.* wide, and yielding some work of copper ore. The distance driven during the past month is 1*l.* 1*l.*. In the 80, west of Watson's shaft, the lode is 3*l.* wide, composed of capel and quartz, with peach and some good quality copper and muddle ore. The distance driven during the past week is 1*l.* 5*l.*. In the cross-cut south, at Watson's shaft, the ground is not quite so favourable for exploration as, however, of a most congenial character for the production of mineral. The distance driven during the past month is 1*l.* 3*l.*.

EAST BLUE HILLS.—S. Bennetts, W. K. Mitchell, Aug. 13: The lode in 10, both east and west of the engine-shaft, continues much the same as last reported; in the west end it is worth about 1*l.* per fathom, and in the east end about 1*l.* to 1*l.* per fathom. The opening out on the lode at this level thus far most encouraging and satisfactory.

EAST BOTALLACK.—A. Trahair, Aug. 13: The lode in the 12*l.* level, at New Bidden, driving west from shaft, is 2*l.* wide, worth 5*l.* per fathom—40*l.* per fathom. No change in the east end. The slope in the back at level much improved. I sampled to-day 7 tons, producing 23 lbs. of blende to the ton. The west end towards Old Balledwidden comes out more than nothing discovered in the cross-cut yet beyond branches, so far unproductive.

EAST WHEAL ROSE.—W. Skevis, T. Dudge, R. Gill, August 12: The engine-shaft is drained about 5 fms. below the 95 fms. level, and to-day engaged in dropping the two lifts—the 20 and 10 in. to the 95. When the water will be

for good, and this is being urged on with a full staff of men. We shall sell our usual quantity of tin on Thursday next.

WHEAL PEEVOR.—W. T. White, Aug. 13: We have no particular change to report. The men in the 16 cross-cut are doing very good labour, and we hope to cut the lode this month. We are also pushing on the end, west of wing, on new lode to communicate with the above cross-cut, which we hope to do in about another fortnight, as from the sounding they are getting very near. This is very important, and will very much improve our position in working this lode. The sinking of the new shaft on Great North Downs lode, and the driving and the 48 cross-cut north to same, and other bargains are without change. The prospects of the whole of our points are exceedingly good, and we hope soon to report an important discovery.

WHEAL UNY.—Wm. Hamby, Aug. 14: I am pleased to be able to inform you that in the 203 and west the lode has increased in size and improved in character and yield, now worth 12s. per fathom for tin. The lode in the bottom of Hind's engine-shaft is of a highly promising character, and the strata in which the shaft is being sunk is all that can be desired for the production of tin. All other points in operation are much the same as last reported.

SOCIETY OF ENGINEERS.—The Transactions for 1883, which have just been issued, show that the Society well maintains its reputation for practically valuable papers. The present volume contains the inaugural address of the President, Mr. Jabez Church, and papers on a New System of Treating Sewage Matter, by Harry Olrick; on the feasibility and construction of Deep Sea Lighthouses*, by Chris Anderson; on the preservation and ornamentation of Iron and Steel Surfaces*, by George Bower, on the value of Exhibitions as Aids to Engineering Progress, by Samson Barnett, Jun.; report of the Vacation Visits; on designs, specifications and inspection of Iron Work*, by Hamilton W. Pendred; on Dundee street improvements and drainage of Lochee, by Andrew Greig; and on roller milling machinery, by J. Harrison Carter. The several papers are illustrated with well-executed engravings of the diagrams which accompanied them, so that the reader of the volume—which is published for the Society by Messrs. Spon, of Charing Cross—has almost the same advantage as those who heard the papers read. The papers marked* in the above list are those to which the Society's premium of books were awarded. The Transactions are admirably edited and handsomely printed.

MONSTER CAPE DIAMOND.—Is the News True or False?—Some three weeks ago a little flutter was caused in the diamond market by the consignment from a well-known firm in Port Elizabeth, South Africa, to a London agent of a magnificent diamond weighing 457 carats, the largest ever found in any of the mines in South Africa, if not the largest in the world; its colour is said to be of the finest, and known as blue white. Its origin is shrouded in mystery, and beyond doubt has been bought from an "illicit" at the mine from which it is reported to have been found. Jagersfontein Mine, in the Orange Free State, is the reported birthplace of this gem. A syndicate have purchased this stone for 15,000*l.*, and report says 200,000*l.* is the price demanded for it by the purchasers. It is well known that Jagersfontein Mine, in Free State, has for the past two years been almost unworked, and has ruined many a digger, and the assertion made is that if this monster stone had been found and sold in a legitimate manner all the world must have been told of this wonderful gem. Owing to the laws of the diamond mines it is illegal to traffic in diamonds unless the persons hold licenses for so doing, but this law merely covers a circle, and in the Cape Colony proper it is legal to buy any quantity of diamonds, whether come by illicitly or not; and the fact that this diamond has been consigned to this market by a Port Elizabeth house points but too plainly to the fact that the owner of the claim has been robbed of it.

— *Financial News.*

WATSON BROTHERS MINING CIRCULAR.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c
1, ST MICHAEL'S ALLEY CORNHILL, LONDON

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, published annually in the *Mining Journal* for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information of the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash, for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchange at the close market prices of the day, free of all charge for commission. The deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in on the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

Messrs. WATSON BROTHERS take this opportunity of stating that on July 1 they took into partnership Mr. H. J. DEAN, who has been for a number of years associated with the firm, and Mr. W. H. WATSON, who has had some years experience of practical mining and engineering in Cornwall, and is the son of the firm partner. The firm will still be called that of "Watson Brothers."

The number of weekly communications received from almost every part of the world in regard to remarks in this Circular indicate so plainly how much they are read (and, we trust, appreciated) that they will be continued by the same writer.

Indeed, while new blood is introduced to attend to the more laborious and mechanical details of the business, the old will have more time to devote to their different departments.

When the Great Gors lode was first discovered some years ago at D'Eresby Mountain it was visited by a great many persons, and looked upon as a second Van; thus numbers of "D'Eresby's" sprung up around it, but what has become of most of them we cannot say. We have stuck to the "Mountain," and though to this time it may only have brought forth a "mouse" to the shareholders it has, at any rate, yielded 600 tons of lead ore, which at 12*l.* per ton instead of 7*l.*, would have paid well; early sales made over 12*l.* per ton. Now with a new shaft made at great expense in the heart of the lead ground it will pay even at 7*l.* per ton. The Limited company, to which we may refer more particularly next week, have dropped the "Mountain," and with a humbler name, and a much smaller number of shares, may yet do well.

Every share in the new company has been offered on very favourable terms to shareholders in the old, and if they should, any of them, decline the opportunity (in the time given them), others may and will embrace it.

We believe vendors' shares in Oscar are dealt in, but they cannot be registered until the company has paid 10 per cent. on its ordinary shares.

At East Blue Hills the 10 fathom level has been driven 6 fathoms each way through a fine lode in both ends. In about another fortnight sinking of the shaft will be resumed for another level. There has been a very short supply of water for the stamps lately, but good returns will soon be made. The mine is one of the most promising in the district. There is very little new in the weekly reports this week, and the active state of last week's market has not been maintained.

TO THE METAL TRADE.

FOR COPPER, TIN, LEAD, &c., apply to—
MESSRS. PELLY, BOYLE, AND CO.,
SWORN METAL BROKERS,
ALLHALLOWS CHAMBERS, LOMBARD STREET, LONDON.
(ESTABLISHED 1849.)

HENRY NUTT,
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PURCHASER OF
LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, TIN
ASHES, TERNE ASHES, AND ALL REFUSE CON-
TAINING TIN AND LEAD.

HENRY WIGGIN AND CO.,
(LATE EVANS AND ASKIN),
NICKEL AND COBALT REFINERS,
BIRMINGHAM.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, AUG. 15, 1884.			
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* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for
 Canada; 1X 6s. per box more than 10 quoted above, and add 6s. for each X.
 Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—During the past week the Metal Market has been a little irregular, some metals showing an improving tendency and others the reverse. The separate markets have been mainly influenced by those features which bear a local effect, and not much by events which affect the whole trade. It is now said that the harvest at this year will at least be quite equal to what was expected of it, but notwithstanding this there is no stimulus given to the regular trade, and none are now sanguine enough to believe that any material revival will be effected during the coming autumn months, the best that is expected being that the good harvests being reaped, not only in this country but elsewhere also, may prevent any further depression of trade. It does not require to look far to ascertain the reason of this; profits have been so greatly diminished of late months that the spending power of the country has been vastly diminished, and there are but few who have the power and will to enter into fresh enterprise. Every existing feature tends to prove the trade is bad, and in an unhealthy state, but the difficult problem for solution is what keeps it in such an enfeebled condition? Some believe it to arise from adverse political affairs, others put it down to the keenness of competition, or the recent financial difficulties in America and other places, whilst others argue that British trade cannot revive whilst business all over the world is being more or less contracted in all its branches. Doubtless there is a good deal of accuracy in all these views, and it is probably the existence of the whole lot, combined also with some other features of an adverse nature, which makes the demand so sluggish, and pushes prices down to the present most unremunerative figure. However, in some metals there may be some improvement in prices, if not in the demand, notably those metals where statistics show stocks to have been materially reduced; but in the general trade there is but little room for sanguineness, and business appears likely to be carried on in the same manner as it has been during the past few months—in a most hand-to-mouth character. The course of the markets during the past week do not indicate at all what the future may bring forth, one metal advancing and another receding, speculative buying on a small scale being perceptible in the one, and bearing the markets being a common characteristic of others; but there is, notwithstanding these contrary features, one thing common to all—that is a lack of confidence, even in those metals where prices have advanced slightly, and speculative buying has been somewhat brisk, transactions having been principally for cash and not for forward prompts, thus indicating that operators are not very hopeful of the future, and that present contracts are more to meet outstanding prompts which may be falling due in the course of the next few weeks.

COPPER.—This market, after opening with a quiet tone, became slightly more spirited on Tuesday, and an advance of 7s. 6d. per ton was effected in the value of Chili bars, although the market yesterday again took an easier tendency, but is firmer to-day upon the announcement of good deliveries for the half of the month—about 5000 tons. The position of the market is undoubtedly very favourable; more so, perhaps, than what it has been for years past, but the feeling is depressed from fears of increased supplies and bad trade, and until more cheerfulness is given to the tone the market may possibly continue to be neglected, and prices allowed to drop without any effort being put forward to stay the retrogressive tendency. At the same time, the present condition of the market ought to attract operators, and undoubtedly would in ordinary times. The latest returns show considerably reduced stocks, very low prices, limited supplies, and heavy deliveries, while many of the smaller appear to be tolerably well off for orders, and are gradually withdrawing from the market, even at the present slightly improved price that is being realised for manufactured copper. Operators are nervous, and weak holders become anxious sellers upon every little advance; but, notwithstanding these impediments, which check any little improvement, the market certainly appears in a sufficiently sound and healthy state to warrant an advance of at least some few pounds per ton; and if supplies continue to be kept under the requirements of the trade that advance must sooner or later be effected, and will, probably, be made the sharper the longer it is delayed. At any rate, prices are now so low that such an advance would, probably, not interfere with business to any extent, and when once an upward movement is effected in the life and animation will, probably, soon be infused into the market. The Chili market is just advised at 120 tons.

IRON.—The demand for all classes of iron still continues very flat, and prices steady. The intensity of the heat in many of the manufacturing districts has rather tended to check the output; but little or no inconvenience has been caused thereby, as public stocks, and in many cases private stocks, are plentiful, and therefore consumers have no difficulty in satisfying their requirements. A striking feature which has recently characterised the returns from Glasgow is the marked falling off in the shipments for several weeks past compared with the corresponding period of last year. The reduction has been by some thousands of tons per week, and the quantity for the whole year now has been brought much below the exports for the same time of any year since 1879. This is a very bad sign, for it shows the trade is not developing, that so time progresses the wants of consumers are not increasing, and that the low prices fail to stimulate business in any of its branches.

If this had been merely a characteristic for just one week or so no particular importance need have been attached to the minimised shipments; but when week after week the returns become more and more unfavourable, and that the totals for the whole year are so considerably reduced compared to what they have been of late years, then there is matter for anxiety, and the low prices are clearly the result of bad trade. Fortunately the public stock continues to diminish slowly and steadily; but yet in such small quantities that no relief is given to the market. Stocks are heavy—heavier than they have ever been before at corresponding periods, except 1882, when they were particularly large, and therefore the mere falling off of a few tons per week does not make much impression upon the market. It is true prices are low, and lower than they have been for any year at the same time since 1879; but then the public stocks were scarcely half so large as they are now.

The demand for makers' iron continues limited, and prices remain steady. There was a small business doing on the Glasgow warrant market on Monday, and the price was steady between 41s. 5d. and 41s. 6d., and on Tuesday, after opening with an easy tone, and touching 41s. 4d., there was an improvement to 41s. 5d., buyers remaining over at the higher price. On Wednesday the market was steady, and slightly firmer at 41s. 6d., and this little improvement continued yesterday prices hardening up to 41s. 7d., whilst to-day the market has been

quiet, and closes at 41s. 6d. The shipments last week were 9727 tons, against 14,154 tons for the same week of last year, being a decrease of 4327 tons, and which makes the total shipments for the whole of the year 344,425 tons, against 395,257 tons for the same time of last year, and 392,352 tons for the similar period of 1882. There are 95 furnaces in blast, and the public stock has been further reduced by 651 tons, and now amounts to 586,655 tons, against 587,566 tons for the same time of last year.

The imports of Middlesbrough pig-iron into Grangemouth last week were 4250 tons, against 3200 tons for the corresponding week of last year, being an increase of 1050 tons, and which leaves a total decrease for the whole of this year, compared with last, of 6080 tons. Business at Middlesbrough continues almost at a standstill, and as buyers anticipate further reduced rates they hold their orders in abeyance as long as possible. Second-hand lots of No. 3 are procurable at 36s. 6d. to 36s. 9d., but makers are tolerably firm at 37s. No. 4 forge is quoted at 34s. 6d. to 35s. The shipments have slightly increased, those last week being over 2,000 tons, and the public stock has been increased by 215 tons, and is now estimated at 58,511 tons. The demand for manufactured iron is still very quiet, and prices are slightly easier. Common bars are quoted at 57s. to 58s. 2s. 6d.; ship-plates at 47s. 17s. 6d. to 58s.; and angles at 47s. 15s. per ton.

The Wolverhampton market remains depressed, and is likely to continue to do so whilst supplies keep rather ahead of the requirements. Buyers will not in any case increase their limits, and the quotation for merchant sheets is 67s. 15s. for angles; 71s. 10s. for doubles, and 31s. for boiler-plates. Common bars are quoted at 57s. 10s., and best brands at 74s. Hoops can be bought from 67s. 5s., and Northamptonshire pig-iron at 41s., and Staffordshire cinder pigs at 37s. All mine pigs are quoted from 55s. to 57s. 6d. per ton. Business at Birmingham remains very slack, and the various establishments experience great difficulty in keeping their mills in anything like regular employment. Some of the best qualities of bars are in moderate request, but common qualities meet with but little demand, and are freely being offered at 57s. 10s. to 57s. 15s. per ton. Sheets are in limited request, and sales of pigs are chiefly confined to local common forge and Derbyshire qualities.

TIN.—A fair business has been transacted in this metal, and prices, on the whole, have been fairly steady. At the early part of the week 83s. 10s. was the price at which most business was transacted for sharp cash parcels of foreign, but since which the market has been easier. Forward prompt transactions have been carried through merely at an advance of about 2s. 6d. to 5s. per ton upon the cash prices, and this small difference may, perhaps, be the most striking feature of the week, indicating, as it does, that there is no confidence in the future, and that lower prices are looked for. There seems no prospect of any reduction in the future supplies; in fact, on the other hand, it is reported that there are large quantities waiting at many of the ports from whence supplies come forward, until such time as tonnage can be secured, and this naturally helps to depress the market and weaken prices.

The fact of cash prices being obtained may probably be attributed to the purchases which recent "bear" operators are now obliged to effect; but as soon as these purchases are completed there will be nothing left to bolster the market unless some unforeseen and unexpected feature arises. The regular trade is scarcely sufficient to support prices, notwithstanding their low figures compared with the last few years. Heretofore the mainstay of the market has been the excellent deliveries, and it is satisfactory to find that deliveries during the first half of the month are reported very good—about 330 tons—and this may, perhaps, prevent prices from receding seriously. At the same time, owing to the generally unsatisfactory state of trade and the disquieting news from the mining-lane markets, there is little or no disposition shown to follow up any advance that may be made in tin.

STEEL.—There is no improvement in the state of this market, prices all round keep steady; the demand for rails is but moderate, and other descriptions meet with little attention from buyers.

TIN-PLATES.—A fairly good business is being transacted at unaltered prices.

LEAD is quiet and rather easier, Spanish being quoted at 107s. 16s. 3d. to 107s. 18s. 9d.; and English pigs at 117s. to 117s. 2s. 6d. per ton.

SPELTER is dull, but prices unchanged, at 147s. to 147s. 5s. for ordinaries; and 147s. 7s. 6d. to 147s. 12s. 6d. for specials.

QUICKSILVER.—The Board of Trade Returns for July are as follows:—

	1882.	1883.	1884.
Imports—July	4800	15,255	3,802
Seven months	41,990	52,361	54,543
Exports—July	2,503	3,718	5,546
Seven months	21,444	29,323	32,592

These figures are very satisfactory, as indicating the maintenance of the export demand on a previously unknown scale. The market is firm at 57s. 6d. 3d.

In the **MINING SHARE MARKET** the dealers have been chiefly engaged in the settlement of the usual fortnightly account, and this, owing to the increased amount of business and the advance in prices referred to in our last, has been more than usually heavy. The improvement in the market, however, has not been maintained, and some of the prominent mines, particularly Tincoff, Dolcoath, and others have declined in price. It frequently happens when a discovery of any importance is made in a mine that speculators rush into the market and buy shares merely for a rise, and without any intention of taking them up; thus when the day of settlement approaches they have to be resold for what they will fetch, and market quotations are put down in consequence. The dealings this week have included shares in Dolcoath, Tincoff, East Pool, Wheal Agar, East Blue Hills, Prince of Wales, Wheal Crebor, Roman Gravel, Marke Valley, Santa Barbara, Oscar, West Frances, and a few others.

TIN.—There has been no alteration in the standard, and tin is steady. In shares there has not been so much doing this week. Carn Brea is lower, at 3½ to 4. Cook's Kitchen, 9 to 10. At the meeting to-day the loss shown was 2623½, and the debit balance 12,714. A call of 2½ per share was made. This explains the remarks made at East Pool meeting on Monday, reported in another column. Dolcoath has declined to 71, 73. East Pool, 42 to 43 ex div.; at the meeting a profit was shown on the quarter of 6731½, and a dividend of 1½ per share (6400½), leaving 877½ in hand. The tin sold (360 tons) realised 16,276½, and other credits brought up the amount to 17,831½. The mine is looking well. The shaft is down about 12 fms, below the 212, and this level west is worth 30½ per fathom. Since the previous meeting the engine lode has been cut 25 fms.; it is 9 ft. wide, and worth 30½ per fathom. The lode is standing whole from the 170.

West Frances have become more in demand at 5 to 5½; the rise over the 170 has now been put up 96 fms., or at the rate of 10 fms. a month. The whole has been through a lode averaging 1 cwt. of tin to the fathom, and improving. A shaft has been commenced to meet the rise. East Blue Hills, 5s. to 6s.; the adit end has improved. Killifreth, 7s. to 9s.; Mounts Bay, 2s. to 3s.; New Kitty, 1 to 1½; South Condurrow, 8½ to 9; South Frances, 7½ to 8. Tincoffs have declined to 9, 10. West Basset, 3 to 3½; Wheal Basset, 3½ to 4; Wheal Agar, 16½ to 17½; Wheal Grenville, 6 to 6½; Wheal Kitty (St. Agnes), ½ to ¾; Wheal Ury, ½ to ¾; Carn Camborne, ¾ to 1; Polberro, 1½ to 1½; South Crofty, 3 to 4; West Godolphin, 1 to 1½; West Kitty, 1½ to 1½; West Phoenix, ¾ to 1.

COPPER has been firmer, but business in shares is not quite so active as it was, and quotations are, for the most part, merely nominal. Bedford United are quoted 1½ to 2; Devon Great Consols, 2½ to 3; East Caradon, ½ to ¾; Gunnislake (Clitters), 9s. to 11s.; Marke Valley, ½ to ¾; Mellanear, ¾ to 1; New Cook's Kitchen, 1 to 1½; Prince of Wales, ½ to ¾; New West Caradon, ½ to ¾; New Caradon, ½ to ¾; Wheal Crebor, 1½ to 1½; the points in operation are yielding 33 tons of copper ore per fathom, besides manila. South Caradon, ¾ to 1; there are 25 tribute pitches set to 50 men at 12s. to 13s. 4d. in 14. The sampling for the sale on the 21st is 310 tons of ore and 50 tons of slimes. West Crebor, 1s. to 2s.

LEAD.—English lead is quiet at 117s. to 117s. 2s. 6d., and at present mines do not show any appreciable advance or increase of business. Quotations are merely nominal. Great Laxey, 9 to 10; Roman Gravel, 3½ to 3½; Leadhills, 1½ to 1½. Vans, 1½ to 2; it is understood that the shareholders having approved of the scheme submitted to them for raising fresh capital, the new company will be registered in the course of a few days, and operations resumed at Edwards' shaft. Weardale, 1½ to 1½; East Wheal Rose, 7s. to 9s.; Old Shepherds, ¾ to 1.

FOREIGN MINES.—In mines of this class there has been a fair amount of business doing all the week, and prices are well maintained. Akankos are quoted 7-16ths to 9-16ths; Mr. Lane has well returned from the Coast, having left Axim on July 20. "The tremendous rains and unprecedented floods prevented him from bringing with him, as he had looked forward to do, the results of the first month's crushing. Although the floods caused great anxiety, and at least a month's delay it is satisfactory to learn that no damage of consequence has been suffered, and that the foundations of both mill-house and mill have successfully stood a most severe test. A preliminary crushing of some poor rock took place a week before Mr. Lane's departure, and he informs us that the mill, engine-pumps, &c., worked admirably. Continuous crushing in a permanent sense was to have commenced on July 25, by which time the few small modifications shown by the preliminary working to be

advisable would be completed. Mr. Lane estimates that the serves of quartz now stacked close to the mill-house aggregate 3000 tons. The output of stone is constantly increasing, and will be sufficient to keep the mill going without reducing the reserves.

Alamillos, 1½ to 1½; Almada and Tinto, 3-16ths to 5-16ths; Minor, 3-16ths to 5-16ths; Balkis, ½ to ¾. Birdseye Creek, ½ to ¾. The particulars of the annual meeting will be found in another column. The superintendent's report on the past year's work and future prospects is considered satisfactory. A telegram has been received stating that the Uncle Sam mill is running—i.e., that, although hydraulic work is stopped, it is anticipated returns will be made from the drifting process. Bratsberg, 1½ to 1½; Cape Copper, 42 to 44; Chile Gold, ½ to ¾; Chontales, 3s. 6d. to 4s. 6d.; Colorado Hydraulic, 5-16ths to 7-16ths; Colorado United, 1½ to 2; Copia, 2½ to 3; Frontino and Bolivia, ½ to ¾. Kapanga, ½ to ¾; reference to Capt. Argall's last report Messrs. Richard Bros. say:—"The most salient feature referred to is that Scotty's reef has produced 2½ worth of gold per each square yard stopped over the 50; and it is expected to be equally as rich under the 50; and if so No. 8 cross-cut will open up 7000½ worth of gold in about 6 months, while an equally large section of ground would soon be made available by the 70, which has struck Scotty's lode.

Lisbon-Berlyn, 9-16ths to 11-16ths; Mason and Barry, 10½ to 11; Montana, 1½ to 2½; New Callao, 2s. to 4s.; New Emma, ½ to ¾; New Fotosi, ½ to ¾; Organos, ½ to ¾; Orita, 1½ to 1½; Panulilla, 1½ to 1½; Richmond, 3½ to 3½; Rio Tinto, 16½ to 16½; ditto bonds, 10 to 10½; Ruby and Dunderberg, ½ to ¾. Santa Barbara, 7-16ths to 9-16ths; the produce for July was 2500 oits. of gold, worth 1062½ 10s. South Australian Mines Corporation, ½ to ¾; the stopes at the Billam Mine are yielding the usual quantity of ore. Advantage has been taken during the late heavy rains, which somewhat interfered with surface operations, to cleanse the boilers and put the machinery in good working order, so as to take every advantage of the increased water supply for dressing purposes. The returns of ore for the last six months have greatly exceeded that for the same period of the year. St. John del Rey, 70 to 80; Tharsis, 6½ to 6½; Tolima, A. 7. 8.

the year was:—Blue ground hauled, 11,073 loads; reef and stones hauled, 17,916 loads = total number hauled in 67½ days, 28,989 loads. The ground on floors April 1, 1723 loads; hauled as above, 273 loads = total, 19,796 loads. Washed in 52 days 11,014 loads, leaving 82 loads. Add difference between truck and car-load, 4321 loads = balance on June 30, 12,273 loads. Lumps on floors beginning of April, 6371 loads. One carload, 777 loads = 7048 loads. Lumps washed in 14 days, 3982 leaving balance of lumps on floors, 3956 loads.

The diamonds found amounted to 9595½ carats, sold for 11,772½ lbs., including 1½ carats fine sand diamonds. The proceeds per load will be found to have been 868 carats, realising 21s. 3½d. per load, or 24s. 6½d. per carat all round. After deducting 148½ carats fine sand diamonds at 8s. 6d. per carat, the average realised would be 27s. 5½d., a slight increase on the price obtained during the last quarter. The lumps washed realised 7s. 1d. per load. Hauling was carried on for 67½ days. The operations were stopped for one week by the late rain. The working by contract has given full satisfaction to your directors. Loading operations have been carried on for 66 days. The working expenses are slightly increased, the increase was caused by the unremunerative rate allowed for hauling reef. The claims being now cleared of reef, your directors anticipate that the prosperous position of the company will be fully maintained.

The balance-sheet shows that an account amounting to 1334½ lbs. 11d. against De Beers mining fund has been brought down as an asset. Against this a special reserve fund of 1000½ lbs. has been created to provide for this company's share of the reef rates, which the mining board has failed to levy for the five months; 20 per cent. has been written off machinery and plant to allow for depreciation, which you will no doubt consider an ample allowance, as a large amount was also written off last year. The balance of profit and loss account shows 7s. 1d. the directors recommend should be thus dealt with: 256½ lbs. 9d. 5½d. 5 per cent. on the net profits for the quarter, 4734½ lbs. 5d., to be placed in the general reserve fund, increasing it to 1937½ lbs. 7d.; 6160½ being a dividend of 5 per cent. on the company's capital, to be declared payable from the 1st of June to-day; 8624½ lbs. 4d. being balance to be carried forward. The dividends for the year, inclusive of one now recommended, will be 20 per cent., equal to 24,400½.

Devon Great Consols have been in demand during the week, at 2½ to 3½; the monthly sampling of copper ore, and of better quality than last month, is 800 tons, for sale next week. A cross-cut has been commenced to intersect the lode in the 220, at Railway shaft, and the cutting down of the adit shaft at Wheal Maria will be completed in about a week, when sinking will be commenced on the course of the lode.

Devon Great United, ½ to ¾; the 120, east and west of Willeford's shaft, and the 104 west continue to look favourable as operations progress.

Drakewalls, 4s. to 6s.; every effort will be made to effect the clearing out of the shaft from the 92 to the 102 fm. level. Kit Hill, ½ to ¾; the great tunnel level has been driven during the last month 63 ft., making the total distance driven 298 fms. 2 ft., and a branch, or lode, has been intersected. The agent, in his report this week, states that in sinking the north engine-shaft the lode below the 100 fm. level continues to present the same highly favourable indications as were shown during several fathoms sinking above the same level.

South Devon United, ½ to ¾; the lode in Martin's shaft, now down fms. below the 120 fm. level, is reported to be worth 20½ per fathom, and in the 120, west of this shaft, it is worth 12½ per fathom, and the step in the back is worth 14½ per fathom.

South Wheal Frances, 8 to 8½; the lode in Pascoe's shaft is worth 10½ per fathom for 12 ft. long. Good progress is being made in cutting down Marriott's shaft, and in the general development of the mine.

English and Australian Copper, ½ to ¾; the meeting will be held on Thursday next. During the six months ended Dec. 31 the gross quantity of ore received from various mines was 2743 tons 9 cwt. 1 qr., as against 3439 tons 13 cwt. 2 qrs. ore, regulus, and precipitate for the corresponding six months of the previous year. The quantity of ore smelted at Port Adelaide and Newcastle Works was 100 tons 17 cwt., as against 3976 tons 11 cwt. 2 qrs. ore, regulus, and precipitate. The quantity of copper made was 713 tons 13 cwt. 2 qrs. 25 lbs., as against 713 tons 3 cwt. 2 qrs. 4 lbs. And the quantity of copper shipped from and sold in Australia was 713 tons 19 cwt. 2 qrs., as against 713 tons 11 cwt. 0 qr. 18 lbs. The net earnings of the company's wharf at Port Adelaide were 1383½ lbs., as against 1340½ lbs. 3d. for the corresponding half-year. At the time of the general meeting on Feb. 21 the price of Burra Burra copper was 63½ per ton. It is now quoted at 60½ per ton. The statement of the six months' working to Dec. 31 shows an estimated loss of 2276½ lbs. 3d. exclusive of the balance of 181½ lbs. 4d. at the credit of profit and loss on July 1. The reserve fund stands at \$8000.

Richmond, 3½ to 3¾; the shareholders may well be congratulated upon the conclusion of the Albion-Richmond litigation. The Salt Lake Tribune says:—"A great lawsuit has been in progress in Eureka, Nevada, for several weeks between the Albion Mining Company and the Richmond Mining Company. The Albion sued the Richmond for \$500,000 for appropriating Albion ores. Mr. Remington, of this city, has just received a despatch that the Albion had obtained a judgment for \$13,000. This reminds us of Lincoln's man, who commenced by wanting to be appointed Envoy Extraordinary and Minister Plenipotentiary to the Court of St. James, and finally made an humble request for a suit of clothes. The despatch adds:—"The decision is satisfactory to the Richmond." We should think so. The attorney fees of the Albion must have been five times the amount of their verdict." The Denver Tribune "sees much to be pleased at in the result. The Richmond is one of the largest and most profitable mines in the United States, and it would have been a great loss to the country to have had a judgment for the sum sued for recorded against the Richmond people, as the managers had announced that in case of such a decision the mine would be closed down indefinitely."

Ruby and Dunderberg, ½ to ¾; there is no particular change in the report from the mines. The tributaries at the Dunderberg are producing a fair amount of ore, and the developments at the Lord Byron are proceeding steadily, though as yet without much return. It is hoped that when No. 1 cave is cleared out the shipments of ore will increase.

The California Gold Mine telegram (Aug. 14) states that the mine run was 390 tons, worth \$7000 (1400½), and the smelting ore sales \$2700 (540½)=1940½. Stopped to repair main shaft, start again Aug. 25.

The Ouro Preto Gold Mines of Brazil directors have received remittances of gold 603 ozs., value 2421½.

In Lead Mine Shares the business doing is very limited, the anticipated further upward movement in the price of the metal not having taken place; in fact, lead is now very quiet at 11½ to 11¾. 2s. 6d. nominal, and a good order at 5s. less would not be refused. Roman Gravels are quoted at 3½ to 3¾, and are said to have been somewhat more in demand. The 110 south shows a promising lode, and the agent expects that he will be in a good run of ore in the next 4 or 5 fms. driving. A sampling of 100 tons of ore will take place on Thursday next.

Leadhills, 1½ to 2½; the mines are reported to be opening out well, and with the recent improvement in the price of lead ores is said to have caused some demand for the shares, it being well known that the company possesses a large quantity of pig and lead ores.

The Steel Company of Scotland directors, on Wednesday, agreed to recommend (subject to audit) the payment of a dividend at the rate of 7½ per cent. per annum, free of income tax, after writing off for depreciation 17,000½, adding 2000½ to reserve fund, which now amounts to 15,000½, and carrying forward to next year about 2400½.

The Grand Trunk Railway of Canada traffic receipts for the week ended Aug. 9 were:—Grand Trunk, 69,198½, as compared with 74,010½ in the same week of last year, decrease 4812½; Chicago and Grand Trunk, 12,520½, against 9731½, increase 2789½; Detroit Grand Haven and Milwaukee, 5039½, against 5617½, decrease 608½; total, 86,757½, against 89,388½, decrease 2631½. The total aggregate receipts for six weeks to date were 506,112½, against 525,572½, decrease 19,460½.

The Alabama, New Orleans, Texas, and Pacific Junctions Railways Company traffic statement shows:—Cincinnati Southern \$220,360, decrease \$7998; New Orleans and North Eastern (only partially opened last year) \$24,860, increase \$15,861; Vicksburg and Meridian \$31,787, increase \$2452; Vicksburg, Shreveport, and Pacific \$14,352, increase \$10,233.

The Alabama Great Southern Railway traffic receipts for July were \$73,459, against \$72,345 for July last year; increase, \$1114. The Imaginary Meteorological System of the Great Pyramid of Gizeh is treated of in an illustrated 8vo. volume (issued through Mr. R. Van Nostrand, of New York) by Dr. F. A. P. Barnard, the venerable President of Columbia College, New York.

Messrs. C. de Murieta and Co. notify that the Srio of the Debeers Stock of the Buenos Ayres and Pacific Railway Company

(second issue), will be ready for delivery, in exchange for letters of allotment and bankers' receipts, on and after Aug. 13, at their offices in London.

The Institute of Actuaries has been granted a Royal Charter dated July 29.

A subscription has been opened at St. Petersburg, in order to raise the money for instituting at the University five bursaries in the name of Charles Darwin, to be employed for the maintenance of five students in the five chief branches of natural science.

KAPANGA.—Remarks on Capt. Argall's supplementary report dated June 21 Messrs. Rickard Bros. (Aug. 12) write:—"The most salient feature is that 'Scotty's Reef' has produced over 2½ worth of gold for each square yard stopped over the 50. I expect it will be equally as rich under the 50; if so, the No. 8 cross-cut will open up 7000½ worth of gold in about six months," while an equally large section would soon be made available by the 70 fathom level, which has struck Scotty's lode. The No. 8 level reached Scotty's Reef on June 24, three weeks earlier than anticipated, and the prospects there are good. We quite concur in Capt. Argall's view that the whole of the reef should be taken away in the ore shoots, as evidently the gold occurs in irregular patches, and unless the whole of the ground is stopped away the chances are that a large portion of the gold will not be discovered. As regards the parallel reef, although its existence can but add to the value of the property, we approve of its being left for the present, and would advise that the work undertaken by Capt. Argall for putting the mine into a good paying condition, with an outlay of 4500½, be strictly adhered to.

BRATSKBERG.—The report from the managers shows that the mines continue to look exceedingly well. The aggregate value of the different points in operation is nearly 5000. There are two cargoes of copper ore waiting for shipment.

OSCAR GOLD MINE.—By the advices received this week there is every prospect that the machinery will be at work quite within the time anticipated—the end of next month.

GAS SHARES.—The principal business in these shares, according to this evening's report of Messrs. W. L. Webb and Co., of the Stock Exchange and Finch-lane, has been:—Bombay New, 4½; Buenos Ayres, New (Limited), 12½ to 13½; ditto Six per Cent. Debentures, 12½ to 13; Commercial Consolidated, 24½; ditto New Stock, 18½; Continental Union (Limited), Original, 35½; ditto New, 1859 and 1872, 2½; ditto 7 per Cent. Pref., 30 to 30½; Gas Light and Coke, A, Ordinary, 219½ to 227; ditto J, 10 per Cent. Preference, 236; ditto 4 per Cent. Debenture Stock, 108; ditto 4½ per Cent. Debenture Stock, 115½ to 116; Imperial Continental, 199 to 202½; Monte Video (Limited), 17 to 17½; Para (Limited), 4½ to 4¾; Rio de Janeiro (Limited), 21½ to 22½; South Metropolitan, A, 272; ditto B, 222; ditto Perpetual 5 per Cent. Debenture Stock, 128. Gas stocks very good, especially Gas, A, which show an improvement of 7 per cent. on satisfactory meeting account.

INSURANCE SHARES have, according to this evening's report of Messrs. W. L. Webb and Co., of the Stock Exchange and Finch-lane, been dealt in as follows:—Alliance British and Foreign, 37 to 37½; Atlas, 14; Commercial Union, 17½ to 17¾; Employers' Liability Assurance Corporation (Limited), 134 to 135½; Fire Insurance Association (Limited), 14½; Guardian Fire and Life, 58½ to 59½; Imperial Fire, 148½ to 149; Indemnity Marine, 147½; Law Fire, 145½ to 16½; Liverpool and London and Globe Fire and Life, 23½; London, 49 to 49½; Marine (Limited), 26½ to 26¾; Phoenix, 222 to 223; Railway Passengers, 8; Royal Exchange, 375 to 376; Rock Life, 7½ to 7¾; Sun Life, 9½; Universal Marine (Limited), 6½ to 6¾. Insurance quiet. Marine companies only dealt in, and are a little firmer.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. Wm. Abbott, of Tokenhouse-yard, are given in tabular form in the last page of the Journal.

RAILWAY AND GENERAL MARKETS.—Referring to the course of business done to-day during official hours (11 to 3) Mr. Ferdinand R. Kirk Birch-lane, writes:—"Opening: In their haste to put up prices last night the jobbers shot ahead of New York, and are now seeking to depress quotations. Erie, 817½ to 817¾; Central Pacific, 842½ to 843; Lake Shore, 86½ to 87; Illinois Central, 129½ to 129¾. Yesterday's surprising rally of 34, and 4½ in Grand Trunk is maintained, Firsts being still 85 to 86½, and Second 59 to 59½, the Ordinary remain at 11, and the Thirds at 27½. Great Western at 140, and North-Eastern at 152½ show no change. After touching 25, 'buyers' of Orizaba have become easier, and are now quoted 23½ to 25½. Orizaba, 13½ to 15½, and rather wanted. Tolima, 7 to 8. Colombian Hydraulic, 7½ to 8½; the latter are thought well of for a rise. Rio Tinto, 16½ to 16¾; Mason and Barry, 10½ to 10¾; United Mexican, 2½ to 3; Richmond, 3½ to 3¾; Transvaal, 1 to 1½; Montana, 1½ to 2; South Canadian, ¾ to 1; Akankoo, 8s. to 10s.; Bratsberg, 29s. to 31s.; Oscar Gold, ½ to ¾; Roman Gravels, 3½ to 3¾; Victoria Gold, 8s. to 10s.; Wheal Crebor, 1½ to 1¾. Closing: After reaching 59½, Trunk Second are back to 59, the Thirds being dull at 27½. Mexican Railway have fallen to 31, but the Firsts are unchanged at 79. Home railways are strong; in North British and North-Eastern the advance is ½. American shares keep dull; a fall of 1 is shown in Lake Shore. Callao Bis, ¾ to ¾; Ruby, ½ to ¾; Almada, 3s. 6d. to 4s. 6d.

In the High Court of Justice—Chancery Division.

MR. JUSTICE KAY.

IN THE MATTER OF THE PORT PHILLIP AND COLONIAL GOLD MINING COMPANY (LIMITED AND REDUCED);

AND
IN THE MATTER OF THE COMPANIES ACTS, 1867 AND 1877.
Notice is hereby given, that a PETITION FOR CONFIRMING A RESOLUTION reducing the capital of the above company from £200,000 to £125,000 was, on the 17th day of July, 1884, presented to Her Majesty's High Court of Justice, and is now pending; and that the List of Creditors of the company is to be made out as from the 25th day of October, 1884.

MAPLES, TEESDALE, AND CO.,

6, Frederick's-place, Old Jewry, London,
Solicitors to the Company.

ESTABLISHED 1866.—THIRTEEN YEARS IN CORNWALL.

SAMUEL JAMES, STOCK BROKER AND MINING SHARE DEALER, 14, ANGEL COURT, LONDON, E.C.
Member of the Redruth Mining Exchange.

Those who wish to buy or sell any mining shares should consult Mr. JAMES. Mr. J. devotes his entire attention to home and foreign mines, and places his special information at the disposal of his clients. That mining offers undoubted advantages for quick returns no one can deny. Look at the enormous sums of money paid in dividends by home and foreign mines. A large number of wealthy families owe their present proud positions to adventuring in LEGITIMATE MINES. With a better price for metals many of the smaller priced shares would immediately advance some hundreds per cent.

POLBERRO SHARES SHOULD BE BOUGHT AT ONCE.

There are many mines worth attention, as proceedings of recent shareholders' meetings prove beyond doubt. During the last 40 years there has no such opportunity presented itself as the present for investment in British mines. Metals are certain to advance. In well-informed circles no doubt is entertained on this point. Buyers must not further delay orders.

See Selected List published by S. JAMES, 14, Angel-court, London, E.C.

SPECIAL BUSINESS in the following or part:—
25 Bedford United, 29s. 10 South Condurrow, 49. 100 Denver Gold, 1s. 9d.
50 Carn Camborne, 8s. 6d. 50 South Darren, 5s. 50 Frontino, 14s.
5 Cook's Kitchen, 10. 13 S. Devon United, 4s. 20 Gold Coast, 3s.
100 Colicombes Cons, 5s. 6d. 100 South Frances, 27½. 55 Hoover Hill, 4s. 6d.
100 Devon Consols, 43. 80 Tresavean, 5s. 3d. 100 Indian Consol., 2s.
100 D. Friendship, 2s. 3d. 20 Trevaunance, 35s. 100 Indian Glenrock, 2s.
20 Devon United, 5s. 6d. 80 West Caradon, 1s. 100 Javali, 1s. 9d.
100 Drakewalls, 2s. 6d. 50 West Crebor, 1s. 6d. 90 Kolinoor B, 2s. 9d.
5 Dolcoath, 47s. 80 West Gwenna, 3s. 3d. 90 Kapanga, 3s. 3d.
100 East Blue Hills, 5s. 6d. 10 West Kitter, 11½. 25 La Plata, 5s. 6d.
25 Ector, 20s. 20 West Poldice, 6s. 6d. 100 Last Chance, 1s.
50 East Caradon, 2s. 6d. 20 Wheal Bassett, 43½. 80 Lisbon-Berlyn, 12s.
50 East Wheal Rose, 7s. 9d. 40 Wheal Cones, 2s. 9d. 50 Montana, 40s.
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20 Phoenix United, 39s. 100 California Gold, 14s. 30 Tocopilla, 2s. 6d.
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20 Prince of Wales, 4s. 100 Chontales, 4s. 3d. 20 Transvaal Gold, 21 2s.
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Notices to Correspondents.

ORE DEPOSITS—"H. J." (Redruth).—The author is not responsible for the nonsense to which you refer; it is the result of a typographical error, so that you can reserve your wit (?) for another opportunity. The fourth and fifth lines of third column, page 927, in last week's Journal, should read:—"The general conclusions at which Mr. Phillips arrives are that, although convenient for the purpose of description (not disruption) and for fixing our views, &c. We much regret the error, which, however, was so obvious that even 'H. J.' could not have failed to recognise it as such."

GOLD IN INDIA—"H. K." (Luton).—There was certainly no dividend declared at the Glasgow Indian Gold Mines Company last week, and we cannot understand why, if you really be a shareholder, you are acquainted with the position of the concern. It is proposed to send out one of the directors, Mr. MacAlpine, and for this call of 12. 5s. per share will be required. It is true as you state that the Mysore promises to come into profits, but promises are not always reliable. There is not a shadow of a probability of any Indian gold mine yielding profits to shareholders other than directors and officials.

MINE LORDS AND MINE ANNIHILATION.—It was stated in last week's *Mining Journal* by a correspondent that in certain foreign countries the system of paying dues upon profits is adopted as a principle; but in those countries private individuals are not permitted to appropriate the minerals which justly belong to the State. In England private mine lords are annihilating home mining—it is not the low price of metals—and we must either reduce these persons to their proper position of surface owners, or let British mining die out entirely. East Pool, one of the most prosperous mines in the country, held a meeting on Monday, and paid the shareholders a dividend of only 1d. per share (which is at the rate of more than 320 per cent. per annum, I know; but that is not the question), so that while the shareholders who have had all the risk and expense of bringing the concern into profitable working get only 1d. per share, Mr. Bassett, the mine lord, gets nearly 3s. per share, or to be exact, 14. 3s. per cent. on the profit paid to the shareholders—that is, a holder of 10 East Pool shares received only 10d. dividend, and pays Mr. Bassett 14. 3s. 9d. as royalty. The effect of such a ruinous system when a mine is not in a dividend-paying condition can readily be calculated.—*PAIS PLAY*.

LEAD ASHES.—Will one of your numerous practical readers oblige me with plan of the best furnace for reducing lead ashes? The object is not so much to obtain soft lead as to get all the metal out of the slag. Is there not some simple blast-furnace used by the Germans? I am told that large quantities of ashes go to Germany to be reduced, which seems a slur on English metallurgical intelligence.—*THREKENNA*. [The reply to this enquiry will be generally interesting. It is, therefore, inserted; but it has been sent to us without the writer's name, and with false address and date. It is dated Truro, Aug. 12, whilst the postmark shows that it was posted in London on Aug. 14.]

SHARE INVESTMENTS.—I have, and as it now seems foolishly, though always trusting and hoping for the best, laid out about 27. 0s. in the following shares:—Chapel House, Alltani, Oregon, late Bodidra, Llanrwst, Bampfyde, and Cambrian, and as in regularly reading the *Mining Journal* I now hardly ever see any mention of either of the foregoing concerns, can you or any of your readers kindly inform me through your columns whether there is any or the most remote possibility of my ever obtaining any return in either of the above concerns for my outlay? I was induced to invest my little all through the glowing and promising accounts of them published, and I am fearful it is a very bad look-out for me. However, it will take some weight off my mind if any one could kindly let me know the worst as regards the whole of them.—*A. C. R. : Birmingham*. [None of the concerns are much heard of at present, and several of them are virtually defunct, if not absolutely so. Of course, we are taught that nothing is impossible, but the probability of your obtaining any return on the outlay you have made is exceedingly remote. It has been constantly repeated in the *Mining Journal* that although one mining success—East Pool has just paid a dividend at the rate of about 300 per cent. per annum upon the invested capital—compensates for many losses, no one should suffer himself to be induced to invest in mining or any other speculation more than he can conveniently afford to lose. All mine reports are based upon the indications of the hour, and a week's more work may make the concern a brilliant and lasting success, or demonstrate its utter worthlessness. In the latter case the man who has risked his "little all" is ruined for his recklessness. Had you risked 2700l. instead of 2700s. an unlucky selection would have caused you but little inconvenience. Some of the mines mentioned, as the Bampfyde and Cambrian, have produced very good ore, but it is not always the best ore which yields largest profits, quantity of produce and judicious management is often as necessary as rich ore.]

ABBONAMENTO POSTALE AL MINING JOURNAL.—Il prezzo delle associazioni è per tutti gli Stati della Convenzione postale 11. 5s. (3s. fra.) al anno—pagamento anticipato. L'invio da Vienna postale internazionale essendo più comodo e sicuro è sempre preferibile a qualunque altro mezzo. Le lettere ed i reclami devono essere inviati franchi e legittimamente accettati alla Direzione del *Mining Journal*. Nessuna comunicazione potrà essere pubblicata se non quando abbia, per garanzia particolare della Redazione, la firma e l'indirizzo del Corrispondente. Non si restituiscono i manoscritti. Reclami e cambiamenti d'indirizzo devono avere unita la facoltà in corso sotto cui si spedisce il Giornale.

AVIS IMPORTANT—AUX ABONNES ETRANGERS DU "MINING JOURNAL."—Le prix de l'abonnement au *Mining Journal* pour tous les pays de la CONVENTION POSTALE INTERNATIONALE est de 11. 5s. (3s. fra.) le port compris. L'abonnement est payable par anticipation, ou par mandat postal international ou par autre mandat sur Londres. L'abonnement continuera sauf avis contraire.

Received—"L. E. E." (Carmarthen). The address asked for was given in the *Journal* of July 5—"J. A. M." (Finbury-circus). The abstract was crowded out last week, but appears to-day. Your letter has been sent to the author—"E. J. F." Replied by post—"T. A. R." Ditto—"G. S." (Woburn-place). Your statement concerning Nacupai is so improbable that it could only be published over your own signature, and as your name does not appear in the London Directory at the address given, we should require certain portions of the letter to be verified by General Guzman Blanco, the Venezuelan Minister; we should also require to see the deed you mention, or a legalised copy of it. We will allow ample space for the discussion, but it must be straightforward and honest, and devoid of any personal or official roguery must have some better substantiation than a mere printed card, as the names and positions of the parties implicated must be given. In referring to acts done by the President of the Republic as President you must, if you write again, refer to him as such. It would not be etiquette to refer to the Emperor of Germany as Mr. Hohenzollern—"C. S. K." Next week—"P. B." (Worcester, Mass.). The papers have not been reprinted, and the *Journals* of the day named are out of print. See report of Institute of Mechanical Engineers meeting in another column.—*P. W. S.* (Dashwood House). Inserted.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, AUGUST 16, 1884.

THE APPOINTMENT OF ADDITIONAL INSPECTORS OF MINES.

It now appears that the additional Inspectors promised by the Home Secretary will be appointed when Parliament is not sitting—when the selections cannot be questioned in the House of Commons. It is, therefore, to be feared that many of the new Inspectors will be taken from amongst the working miners, as desired by Mr. BURR, and to some extent tacitly acquiesced in by the Home Secretary. Such appointments could not fail to seriously interfere with the ordinary working of mines, and, it is believed, would greatly disturb the harmonious relationship now prevailing in most of our mining districts between employers and workmen. This at least is the feeling entertained by the mineowners in most parts of the country, and who are now looking forward with no ordinary interest to the publication of the names of the persons appointed. The feeling on the subject, as entertained by those connected with our mines, was forcibly expressed a few days ago by Mr. PARKER-RHODES, a well-known solicitor of extensive practice in the West Riding, and who is also a mineowner as well. He said, whether it was necessary to increase the number of Inspectors or not might be a matter of question, but there was another proposition in connection with it which he looked upon as being of the greatest interest to all persons interested in mining. That was a proposition that those who were appointed Inspectors should be what were called persons practically acquainted with mining. If that meant that those who had been brought to the top as representing the men were to be appointed Inspectors to control the mining interests of this country, he believed all mineowners would agree with him that such a proposition would be viewed with the greatest possible distrust, and would give rise to the gravest possible consequences. To those who are at all acquainted with the officials connected with the Miners' Associations, and some of whom look forward to being appointed Government Inspectors of Mines, the accuracy of the views given above will be admitted to be beyond question.

Mr. PARKER-RHODES is equally correct in his estimation of the duties of an Inspector of Mines. He remarked that he did not know a more difficult and delicate position that could be filled by any official in the Government of the country than that of Inspector of Mines, holding as he did the scales evenly between employers and employed. He had continually to listen to anonymous communications and innuendoes against the management, many baseless, many on very slight foundations indeed, and it required a person of great judgment, and of some standing in the social scale, to do justice and to fill that office without inflicting injury on the men or on the owners of mines. The subject is one of the greatest importance to mineowners, and Mr. PARKER-RHODES urged that it should be closely and attentively watched in the interests of both masters and workmen. The new appointments, indeed, may be said just now the great mining evil of the period, and the list of the appointments by the Home Secretary, which is sure to come out shortly, is now looked forward to, as we have before stated, with no ordinary interest by mineowners, for it will then be seen whether the scientific and intellectual standard which has hitherto been the rule with respect to the appointment of Government Inspectors of Mines is to be greatly lowered or not.

EMPLOYERS' LIABILITY.

We have repeatedly called attention to the vast amount of litigation which has been called forth under the recently passed Employers' Liability Act. It is the best friend which the gentlemen of the long robes have had for many years past. It bristles with legal quibbles and difficulties in almost every clause, and has caused, and is still causing, more vexatious annoyance to colliery proprietors, manufacturers, and factory owners than any other Act ever passed. It has done much to destroy the amicable relationship which formerly subsisted between employer and employed by opening the door of litigation on the part of dissatisfied workmen or paid Trades Unionists. It militates seriously against all manufactures, the proprietors of works and factories being hedged round with restrictions and complications which place them at unfair disadvantage with continental and foreign competitors, and we undertake to say that there is scarcely a manufacturer of any standing in the commercial world but unhesitatingly condemns this Act as not only unnecessary, but as not restrictive, and injurious in its application.

These remarks have been called forth from a perusal of a most protracted and costly trial which has been held during the past week, at Swansea, before Judge STEVENS and a special jury. For four whole days were judge, jury, and counsel engaged in the investigation of a case connected with the working and management of a colliery, which in all probability half-a-dozen practical men would have settled in as many hours. The amount of money which must have been spent in feeling the array of counsel, the solicitors, and the host of witnesses on either side, must have been enormous. The plaintiff, Mrs. ELIZABETH LEWIS, brought her action under the Limited Liability Act to recover three years' wages—200l. against the proprietors of the Gelly Colliery, Rhondda Valley, for the death of her husband by an explosion in this colliery. For the plaintiff there appeared Mr. MCINTYRE, Q.C., M.P., Mr. B. FRANCIS WILLIAMS, and Mr. T. LEWIS, whilst for the defendants the Attorney-General had been specially retained, and Mr. ABEL THOMAS. The defendants were Mr. EDMUND THOMAS and THOMAS GRIFFITHS, the owners of the Gelly Colliery, and the Mutual Boilers Insurance Company.

Now although this case occupied the attention of the Court for four days with such a formidable array of legal talent, the facts lay in a nutshell, and should have been of easy solution by means of amicable adjustment or arbitration. Everybody knows that all collieries are now worked under the general rules of the Mines Regulation Act, the first of which is to the effect that the owner and manager shall provide sufficient ventilation to dilute and render harmless all noxious gases in all the working places of the mine. It is also well known that there is (happily for the employers of labour) a saving clause in the Employers' Liability Act, to the effect that employers are not liable for damages where there is contributory negligence on the part of the workmen. The two questions, therefore, for the determination of the jury in this case were—first, whether the colliery was properly and sufficiently ventilated; and, secondly, had there been contributory negligence on the part of the workmen. Of course there was a vast amount of evidence on both sides, and a conflict of opinion which necessarily puzzled both judge and jury. The simple facts are these. On Aug. 21, 1883, the deceased was ripping the roof in the stall; another man, named DAVID LEWIS, was holding a lamp, when an explosion occurred, killing the deceased and four other men. The contention of the plaintiff was this was consequent upon defective ventilation, and a good deal of evidence was adduced to prove that the attention of the owners and managers had been previously called thereto. On behalf of the defendants, it was alleged the accident occurred through the negligence of the deceased, who was ripping the roof of his stall whilst another man was holding a lamp in an improper position—that the heading fell, drawing the flame through the gauze of the lamp, and causing the explosion. The manager swore that no one had ever called his attention to the defective state of the ventilation. His Lordship, in an exhaustive summing up of the case, referred to the difficulties which beset such actions. The defendants were not liable for damages could contributory negligence be shown on the part of the plaintiff; and the onus did not rest with the defendant to prove that there was contributory negligence on the part of the plaintiff, but with the plaintiff

to prove that there was not. The plaintiff could not recover if he could prove that the defendant had so neglected his duty as to cause the explosion. What constituted neglect, where neglect was to be considered and determined, and one upon which he could not depend. The jury, after a short deliberation, returned a verdict in favour of the defendant. The case was an important one for both owner and workmen, and its protracted length and the vast amount of scientific and skilled evidence called to prove the condition of the mine, what is or is not contributory negligence, suffices to show the difficulties which beset the practical operation of the Employers' Liability Act, and that an amendment is urgently required, which, it is earnestly hoped, will endeavour to give some more satisfactory solution of the "Gordian knot" as to what constitutes contributory neglect.

SCOTCH PIG-IRON WARRANT MARKET.

Mr. W. WILSON (Glasgow, Aug. 13) writes:—The warrant market is firm, notwithstanding that Cleveland iron has fallen 6d. per ton of late; and even yet Scotch iron is comparatively the cheapest of the two, unless the difference which formerly existed between the prices of the two irons is no longer to continue. The price of the warrants has changed very little during the last three months; is the more remarkable when the heaviness of the stock is considered, and shows that warrants are particularly well held. There are slightly more favourable reports coming in regarding the branches of the trade; these may be somewhat exaggerated, but have some basis of truth. Shipments are small for the week, and not compare favourably. There is no change in the number of nances blowing: 601 tons were taken out of store here last week while 195 tons were taken out at Middlesbrough. Business was during the past week at the following prompt cash prices:—

Thursday, Aug. 7.	Friday, Aug. 8.	Monday, Aug. 11.
41/8, 41/3	41/8, 41/5 1/2	41/8, 41/8, 41/8 1/2
Tuesday, Aug. 12.	Wednesday, Aug. 13.	Thursday, Aug. 14.
41/5, 41/4, 41/5	41/5 1/2, 41/7	41/7, 41/6, 41/7 1/2
1884.	1883.	1882.
Price of Scotch Warrants, Aug. 11...	41/5 1/2	40/11
Furnaces in blast in Scotland do. ...	95	114
Iron in store at this date ...	586,905	584,593
Shipments of Scotch pig-iron for 1 week ending Aug. 9 ...	9,727	14,054
Do. since beginning of year ...	344,425	395,257
Price of Middlesbrough, No. 3, Aug. 11	36/8	35/9
Furnaces in blast Middlesbrough dist.	99	118
Middlesbrough Iron Imported at Grangemouth, week ending Aug. 9 ...	4,250	3,200
Do. do. since beginning of year ...	156,461	162,524
		125,975

CALIFORNIAN GOLD MINES.—The North Bloomfield and Hydraulic Mining Companies are, says the San Francisco Post, the two largest mining companies in California, and are almost exclusively owned by residents of that State; their stock has never been listed on our exchanges, and the public has had very little information regarding them. But large profits have been declared their capital account amounted to a large sum of \$4,079,321.62, nearly all of which was used in the construction of reservoirs, canals, and tunnels, and all of which was expended before any outcry had been made against hydraulic mining. For the past five years their bullion product and profits have been:

	Bullion product.	Water sales.	Net profit.
1877.....	\$670,774.57	\$6,753.67	\$364,045.48
1878.....	849,036.16	9,694.53	501,181.05
1879.....	794,517.90	9,090.84	462,821.42
1880.....	665,710.60	12,395.26	264,075.49
1881.....	637,682.06	24,233.03	325,226.62
Totals.....	\$3,617,721.29	\$62,167.33	\$1,917,330.06

These mines were closed for four months during the year 1881 on an injunction from the Judge of Sutter county, else their production the year would have been nearly \$900,000. For the year 1882 the bullion output will be larger than ever before, and may reach \$1,000,000. The last clean up from the Bloomfield Mine was \$114,000, which was run into a single bar, and attracted much attention at the Bank of California where it was exhibited a few days since. These two companies alone support a population of 3000 persons in Nevada county, besides the indirect support given to the merchants and manufacturers of our city, where all the supplies for the mines are purchased. No Chinamen are employed, and labour being exclusively used. Practically all the product from these mines accrues to the benefit of San Francisco, either in the purchase of provisions, supplies, &c., or in disbursement of profits to the owners, who, as stated before, with one or two exceptions are residents of this city. There are very many other hydraulic mining companies in the State of almost equal importance to the Bloomfield and Milton, and should they be closed because a comparatively small extent of agricultural land is being temporarily injured by their operations the result would be most injurious to our city.

SHORT ACCOUNT OF A GREAT FIRM.—It has more than once been shown in the columns of the *Mining Journal* that a return to Protection is neither possible nor desirable, that it would not improve business, and that it would reduce our entire industrial population to starvation; yet that Free Trade has been an unmixed good cannot be judged from the experience thus far obtained, be pretended. Mr. MARK ARCHER's pamphlet—"A Short Account of a Great Firm with Some Thoughts on its Present Position and Future Prospects By a Small Shareholder. London: Ranken and Co., Drury House Strand—the second thousand of which, with additional matter and appendix, has just been issued, is an extremely clever little political squib, which, whilst tracing the history of the country in a humorous allegorical style affords much material for sound and healthy thought. It cannot be too widely read by either Protectionists or Free Traders, especially as it may facilitate suggestions which will bring about a state of affairs which will satisfy both. The author remarks that if the individual members or servants of the firm of John Bull and Co. (the great firm which is the author's hero) "choose to be philanthropic and bountiful, well and good. But to enable them to do this their directors must conduct the business with a jealous regard for its lasting prosperity. The lead miners of Britain are a fine race, and yet the greater proportion of them are without work. What good is it to tell such men that bread is cheap, and that, though they suffer, other men are thriving on British money in Spain? What good is it to tell the farmer and the artisan that though they cannot make ends meet amongst the millions of their fellow shareholders and workmen, it is British money that is opening out the United States for the benefit of German and other emigrants? If farmers are tenantless, and agricultural labourers can scarcely live, of what avail is the power to vote in the election of directors? The existing condition of things is a stern proof that a great number of votes does not ensure good management. When we look around and see that hostile tariffs shut out our goods from foreign markets, whilst our directors admit foreign produce duty free, and when, together with these facts we see around us idleness and ruin, it is evident there are just reasons for doubting the wisdom of our mode of dealing with competitors. The shipping question is a curious instance of how material prosperity is sacrificed to false philanthropy, for whilst every other nation or company is endeavouring to create a ship-owning class, and in some cases paying large bounties as an encouragement to that end, the directors of John Bull and Co. harass their shipowners in a variety of ways, on the plea of making life and property more secure. When we consider the advantages possessed by and encouragement given to foreign shipowners, it cannot be a matter to be wondered at that our seamen and ships are unemployed. Taking the whole circumstances of the business into consideration, it does seem reasonable that the directors should be called upon to pay more attention to substance, and less to theories, so that the foreigner may have no more than he is entitled to, and the enterprising spirit of Britons may have the encouragement it ought to have at the hands of those whose principal object should be to increase the wealth and prosperity of a great firm." It is but justice to the author to say that it is not Protection but equitable Reciprocity which he advocates as the remedy for all present evils.

THE BRISTOL COAL FIELD.

IMPORTANT DISCOVERY AT KINGSWOOD—RESERVE OF 8,000,000 TONS.

The members of the Cotteswold Field Club, under the leadership of their President, Sir William Guise, and their secretary, Dr. Paine, on an excursion on Tuesday, to the neighbourhood of Kingswood, at the invitation of Mr. HANDEL COSSHAM, to hear from him a paper on an important discovery he had made with regard to the coal measures of the district, and for the subjoined interesting report of proceedings we are indebted to the Bristol Mercury and Daily Echo. A numerous company met at Fishponds station in the morning, including, beside the President and secretary of the club, Mr. Etheridge (President of the Geological Society), Mr. W. J. Stanton, Mr. Ritchell, Prof. Morgan (Bristol University College), Mr. C. W. Murch (Bath), Mr. James Somerville, Dr. Burder, Mr. Lewis, &c. Under the leadership of Mr. Cossam, the party drove through the From Valley, inspecting by the way the Penton Quarries, to Stoke House, from the charmingly situated terrace, which a grand view of the surrounding country is obtained. Mr. Cossam and Mr. Etheridge explained the geological features of the district. By the courtesy of Admiral Close the interior of the house was inspected, and some refreshment partaken of. The drive was then continued through Stapleton and by the beds of new red stone to Holly Lodge, where the party was very hospitably entertained at luncheon by Mr. Cossam in a tent on the lawn. After luncheon, Mr. Cossam read his paper.

After remarking on the complicated geology of the Bristol coal field, and particularly of the northern part of it, Mr. Cossam mentioned that 20 years ago he was able to correct the geological maps of the district by showing that the supposed millstone grit, or Farewell Rock, between Bristol and Wick, was one of the silicious sandstones of the coal measures. It had consequently been discovered that the coal-bearing strata extend south of Kingswood and St. George under the River Avon and, as far as he knew, to the Mendips. That discovery had had an important bearing on the mining industry of the district, and would help in the future to unlock the mineral resources of the neighbouring county of Somerset. He had, however, now to describe a discovery he had recently made, which, he believed, would prove of much greater importance. He reminded them that the Kingswood section of the Bristol coal field contains probably the most ancient coal workings, not only of this county, but probably older than those of South Wales, Somerset, or Dean Forest. In 1371 Edward III. issued a mandate to the keeper of the manor of Kingswood to allow Edward, the son of Hugh Blunt, lord of the manor of Bitton, to take, sell, and carry away wood, gorse, and sea coal found within the demesne; and by the second half of the 17th century he saw by a map which passed to him as lord of the manor, that in the 1672 there were no less than 70 small coal pits at work in the Chase of Kingswood.

The workings, down to the early part of this century, were, of course, confined to shallow depths, chiefly drained by levels into the From and Froom rivers, and were mainly confined to the upper section of the seams now worked in the district. About 50 years ago the Great Vein series were discovered, and have been largely worked ever since on the south dip, and over a considerable area. Some time ago he resolved to explore the whole of the area, about 2500 acres, the mineral freehold of which he purchased some years ago. To do this he commenced an exploring drift to the south, at a depth of 65 fms. from his Belgium Pit, to cut the upper section of seams that lay over the ordinary Kingswood series, and between those and the Pennant rock; and at the same time he started a drift to the north, at a depth of 500 yards from the bottom of Speedwell Pit, and it was the discoveries made by the latter, or north drift, from Speedwell, that he wished to describe. For some 200 yards this drift was driven in strata nearly upright, and exhibited traces of great disturbance and enormous lateral pressure; and, in fact, the whole of the Kingswood district has in past workings exhibited proofs of enormous disturbance and displacements, chiefly, as I some time ago explained in a paper which I published, having been produced by lateral pressure, and not by vertical movements. Some 250 yards north of Speedwell Pit they cut a seam of coal about 2 ft. 4 in. thick, lying in an upright position, and for a long time he supposed this to be the first of the lower, or Ashton, series of veins, which was what he expected to find when he drove the underground tunnel. But extending the drift some 50 or 100 yards further to the north they found the strata became horizontal, and they struck a second seam of coal in several separate beds, the thickest of which was about 20 in. After following the vein for some 50 to 100 yards he found that it was one of the old Great Vein group that had been worked 300 to 350 yards overhead up to the outcrop of the vein near the surface. This fact was so difficult to explain that he resolved before coming to any decided conclusion to drive cross measure drifts to the veins above and below, so as to prove the fact beyond doubt before accepting it himself or announcing it to others. At the proper distance below this second vein, known as the Gillers End Vein, he found a particular and remarkable bed of strata, known in the district as the "Worm Bed," in its proper position in connection with this vein. He also knew that, if he were correct, in his opinion he should find at a distance of some 30 yards vertical above this vein the splendid seam or bed of coal known as the Kingswood Great Vein, which he had no doubt was the equivalent of the celebrated Four-foot Aberdare Steam Coal Vein. Driving a drift across the measures he discovered on Feb. 21 last the vein known as the Kingswood Great Vein, lying in a splendid position, and an average of about 5 ft. thick, or from that to 5 ft. 6 in. Since that time he had been driving on these veins north, east, south, and west, and found that he was on the floor of the original coal field with a gentle dip to the west and rise to the east of about 3 in. to the yard, and apparently extending to the north and east far beyond the bounds of his mineral estate. He did not want to trouble his hearers with anything that was merely personal and commercial, but he was sure they would pardon him for saying that not the least interesting feature of this discovery to him was that it had revealed the existence of from 6,000,000 to 8,000,000 tons of magnificent steam coal in his mineral estate that he had no expectation of having, and he could see clearly that for the next 50 to 100 years at least the collieries he worked could go on landing a large quantity of splendid coal, at a cost that would enable those who worked them to hold their ground against all competitors, come from where it may, and thus continue to develop one of the important industries of the district.

In considering how this coal field came to be so placed, they might take it as proved beyond all controversy that the seams of coal which he had found were the same seams that have been worked under considerable difficulty the last 50 years, arising from the dislocated and disturbed character of the district, and which have been worked for hundreds of yards to the north over the head of the veins lately discovered. The only explanation he could give of the phenomenon was that there had been in the past history of this district a time when the whole of the paleozoic strata, including the coal measures, have been pushed by some force exerted on the south bodily over the top of the coal field of the district, and, strange as it might sound, he believed it to be strictly true, and that though this Kingswood Chase coal field has been worked more or less for at least five centuries, the real coal field, or rather the original level of the coal field, has never been seen before the year 1884. If he were starting life again, and had 100,000l. to spare, he would willingly risk it on the correctness of this opinion. Fortunately, however, he had no need of expending any great amount of money to develop this new coal field, for by singular good luck, pits, machinery, and general arrangements could not have been better placed for working this new field, if he had laid them out with that object, and with special regard to the state of things recently discovered. Proceeding to the source of the dislocating force, he said the Mendip Hills formed the southern boundary of the Bristol coal field, though their distinguished President (Sir William Guise), Mr. Etheridge, and himself were able some two or three years ago, to gather proofs from the rocks at Cannington Park, near Bridgwater, that those rocks, which had previously been regarded as Devonian limestone, were after all the carboniferous limestone, though of a highly crystalline condition, and very sparse

of fossil remains. Being, however, genuine mountain limestone they showed almost certainly the existence of a coal field south of the Mendips. His object in referring to this was to recall their attention to a fact that was proved by their friend Mr. Etheridge, and the late Mr. Charles Moore of Bath, beyond all question—that the Mendips were lifted after the deposition of the coal measures—but prior to the deposition of the secondary rocks—and that when those hills were thrust up the volcanic force that in some portions had pushed the lava right through the limestone and old red sandstone the whole country to the north, and possibly to the south as well, was thrust forward. At Radstock, 5 miles north of the Mendips, this thrust had given Lady Waldegrave a double quantity of the Radstock or upper series in veins. They must, however, look for the force that has thrust the Kingswood coal field over itself at a nearer point than the Mendip Hills, and he thought if they would look at the enormous development of carboniferous limestone at Blackdown, Bourton, and in that district, they would see the seat of the force that has caused this displacement. It was singular and exceedingly interesting to note the effect of this thrust. If they looked at the map they would see that south of where they stood the River Avon has been pushed a mile to the north out of its natural course by the same force that had thrust the coal field over itself, and he happened to know that 2 or 3 miles below the level course of the seam of coal in the coal field had been turned almost at right angles to its regular course by the same upheaval of carboniferous limestone, and the displacement caused thereby and the level course of the workings on the south dip of the coal field at Kingswood at a great depth, followed the remarkable course in the river to which he had called attention, thus showing pretty conclusively that the course which had caused the one had produced the other. The level course of the workings at the South Liberty of the Ashton Colliery had been turned round by the same course. In conclusion, Mr. Cossam remarked that the problem he had endeavoured to explain would have a very important influence on the future of the district, and was associated with an industry upon which the future of the country largely depended. Whenever England's mineral resources failed her commercial supremacy must end; and, therefore, every discovery that widened the area and increased the extent of their mineral resources should be regarded with interest.

Sir WILLIAM GUISE thanked Mr. Cossam for his paper and for communicating his discovery first to the club; he regarded it as the most important and valuable that they had yet had in their transactions. Mr. Etheridge said the discovery was the most important that had been made in the district for the last 25 years. He thoroughly endorsed Mr. Cossam's facts and conclusions, which, he said, gave the key to the geology of the north part of the Bristol coal field.

A portion of the party afterwards descended the Speedwell shaft with Mr. Cossam, and saw for themselves the strata lying as he had described them.

REPORT FROM CORNWALL.

Aug. 14.—It is exceedingly satisfactory to note how thoroughly mining circles here in the West are becoming permeated with the idea of an impending revival. So much sanguine feeling has rarely been known for a long time; and it seems very evident that there is a good deal to justify it. The very satisfactory character of East Pool account has had its share in confirming this feeling, but no one factor has had more to do with it than the turn in the tide at Tincroft. There must have been more despondency than was generally acknowledged at the untoward state of things in that district for the reaction to have been so thorough and complete.

The special event of the week has, of course, been the annual meetings of the Polytechnic and the Miners' Associations. The former society has had a very good exhibition, as will be seen elsewhere; but not of that exceptional importance in connection with mining industry which has been commonly the case. At the meeting of the Miners' Association a paper was presented giving some valuable statistics touching the comparative performances of the oscillating stamps of Mr. Husband, now working at Tregurtha, and the old gravity stamps. The point of chief present interest here, however, was evidently the question of amalgamation with the Mining Institute, though the answers received from the leading members had left no doubt as to the feeling being in favour of the proposal.

We are glad to find that the Cornwall Mixed Ore and Chemical Company is receiving the support of a large number of highly influential local names. Its success has a far wider influence and importance than the interests of its own proprietary; for only in some such way as that which Mr. Collins proposes to apply can the enormous wealth which the county possesses, in actually available stores of low produce and mixed ores, be realised. The success of such a scheme is really not a matter of doubt; and but for accidental conditions, which do not exist in this case, the problem ought to have been solved long since. Given the materials, all the rest is a question of scientific capacity and business skill; and in the present venture neither element is wanting. We lay all the more stress upon this matter because of the immense importance success here must have upon the fortunes of our mining districts generally. With but one exception, or a casual two, our present mining processes are purely mechanical, and, so far as we are concerned, chemistry might have stood still for the past quarter of a century. Is there any other industry of which a similar thing could be said? It certainly is not a reflection to make us proud.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Aug. 14.—The new lists of the leading collieries on Cannock Chase showing, as I last week announced, an advance of 1s. on coal and 6d. on slack make best ironworks coal 7s. 6d. per ton; second quality, 6s. 6d.; and third quality, 6s. House coal is 10s. 6d. for best deep, 10s. for yard coal and deep one way, 9s. for best shallow, 8s. 6d. for screened deep, 8s. for small shallow, 7s. 6d. for deep rough and London bright, 7s. for deep and shallow nuts, and 6s. 6d. for shallow rough. These full prices are not, however, being realised. Merchants will not buy house coal in advance at them, and ironworks proprietors will not send their boats to the pits unless a sensible concession is made. The iron trade presents no new feature of importance this week. Prices still favour buyers. The proposal to reduce wages in the iron trade has been discussed this week by the ironworkers. At a meeting on Monday, at Walsall, Mr. James Capper, the operative secretary, stated that during the last 10 years the men had submitted to no fewer than 13 reductions, bringing their wages for puddling down to 7s. 3d. from 13s. 3d. He argued that 8s. was the lowest wage the puddlers should receive, and to obtain this the men should be united. It was true that the tonnage rate in the North was 6s. 6d., but it should be considered that for many years the men in South Staffordshire had received 6d. per ton in lieu of the northern extras. Therefore they were only 3d. in advance of the northern rates, whereas in point of fact they ought to receive 6d. per ton more for puddling than the northern men, because the Staffordshire finished iron obtained a much higher price than the northern article. The outcome of the meeting was that a resolution that the demand was unreasonable and uncalled for. A more spirited resolve has, however, been come to by a meeting in the West Bromwich District. The men there have pledged themselves to resist a drop if it be awarded. But there can be little doubt that Mr. Capper's advice that the men should submit to whatever is awarded by the arbitrators will be acted upon.

The most important feature of the strike in the coal trade this week is the legal proceedings which have been begun by four miners against the Sandwell Park Colliery Company for 14 days' wages in lieu of notice. The men's contention is that the proprietors should have given 14 days' notice of the reduction awarded by Mr. Joseph Rowlands. As, however, both sides have determined to employ barristers, the case has been adjourned for a fortnight. It is understood that 400 miners are interested in the result of the proceedings. The employers show no signs of giving way, and the men are still persistently passing resolutions to "play on."

A paper "On Underground Velocities in Connection with Ventilation and Illumination," was read this week at a meeting of the North

Staffordshire Institute of Mining Engineers on behalf of Mr. A. R. Sawyer, the Assistant Government Inspector of Mines. The writer held that the velocity of the air in collieries bore very materially on the subject of lamps. A table giving the velocities which he has recently taken in some of the largest collieries in North Staffordshire, was produced as a supplement to his previous papers relating to lamps and ventilation. Mr. John Strick read a paper "On Wavish's Patent for Preventing Smoke, Economising Fuel, and Circulating Water in Steam-boilers," and also for economising fuel and preventing smoke in domestic grates. The paper was considered satisfactory, and was ordered to be printed.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Aug. 14.—The report presented to the Trustees of the Carnarvon Harbour last week will show, perhaps, better than any other means the present state of trade at that port, as compared with the trade of the same month (July) of last year. The dues received from imports during the month amounted to 16l., while those of the exports were 55l., making a total of 105l., or 10l. in excess of those received during the month of July, 1883. The return showing the shipment of slates from the port is still more favourable. The increase has been nearly 8 per cent. on the tonnage of July of last year.

Carnarvon may be taken as furnishing an average return of the slate shipping traffic, and figures like the above are the more cheering, seeing that they bear with their reliability and accuracy, which should be attached to all official data. The harbour at Carnarvon, which is a tidal one, is, however, not kept so free from danger as could be desired. This is shown by the fact that the Harbour Commissioners have been recently considering a claim for 56l. 7s. 6d. for damage done to a vessel named the John Herbert while lying alongside the quay. It appears that when the vessel grounded at low water she rested on the roof of a tree, which had been floating about the harbour for some days, and the damage complained of was then done. The demand which has recently arisen for small sized, and even discoloured stocks of old slates still continues, and may be even said to increase. This is a great boon to second-rate quarries, and puts them in greater activity, and their proprietors in better spirits.

A new and important industry seems to be arising in the making of bricks from the slate refuse. The interest taken in this new manufacture is wide and increasing. It need hardly be said that there is abundant material in the debris heaps and tips from the slate quarries to furnish the material for bricks for an indefinite period. The port of Dinorwic from which the slates from the Llanberis district are shipped, is not so busy as could be desired, if we may judge from the number of ships lying off the quay.

One of the engineers who gave evidence against the Manchester Ship Canal Bill took exception to the employment of the new red sandstone of Cheshire in the construction of the necessary retaining walls, on the ground that it was too light and porous. He recommended slag as a suitable material, and was evidently unaware that within a day's sail of the port of Liverpool the limestones of Anglesea and the greenstones of Carnarvonshire could be obtained in any quantities. At Festiniog last week the Tangmadog Slate Works were almost entirely destroyed by fire.

The smelting-works along the coast and estuary of the Dee still retain their large stocks of pig-lead. The lead ore is mostly derived from sources foreign to the Principality, for most of the Welsh lead mines are now at a standstill, while many of them are being dismantled. The sale of all the machinery and plant at the West Llanberis Mines, in Cardiganshire, takes place on Thursday next, and thus this mine will soon be added to the long and increasing list of abandoned enterprises.

A labourer at the Connah's Quay Alkali Works has obtained a verdict for 142l. damages under the Employers' Liability Act. He was employed as a brakesman upon the tip, and the accident by which he lost a foot occurred through the brake of one of the wagons being out of repair. It seems that he had previously reported the matter to his foreman, and no notice had been taken.

The Coal Trade continues depressed, but there is a tendency to reduce the stocks of rough slack which have accumulated. It is in demand for steam and manufacturing purposes.

REPORT FROM LANCASHIRE.

Aug. 14.—There is very little change to report with regard to the Condition of the Coal Trade in this district. All descriptions of round coal continue bad to sell, and with pits, taking them all through, scarcely working four days per week, stocks are accumulating. The better classes of round coal are in extremely poor demand for house-fire purposes, and the commoner qualities meet with only a slow sale for steam and iron-making purposes. Quoted rates are without change, and there is a disposition rather to work short time or put down into stock than attempt to force business at excessively low prices. There is, however, an anxiety to sell, which has a tendency to give a weak tone to the market, and to effect sales to clear away stocks, colliery proprietors in many cases are open to quote special rates at under their list prices. At the pit month best Wigan Arley averages 8s. 6d. to 9s.; seconds, about 6s. 9d. to 7s.; Pemberton Four-foot, 6s. 6d. to 7s.; common house-fire coal, 5s. 6d. to 6s.; and common round coal for steam and forge purposes, 5s. to 5s. 6d. per ton. For engine classes of fuel there is a moderate demand; but there is none of that scarcity of slack which is usual during the summer months, and prices are only maintained at late rates. Bury averages 4s. 6d. to 5s.; for some of the very best slack, 4s. 3d. to 4s. 6d. per ton is obtained, but good ordinary qualities can be got at about 3s. 9d. to 4s., and common at 3s. 3d. to 3s. 6d. per ton at the pit month.

For shipment there has not been more than a moderate demand and Lancashire steam coal can be got at about 7s. 3d. to 7s. 6d. per ton, delivered at the High Level, Liverpool, or the Garston Docks.

In the Iron Trade there is still an absence of any movement towards improvement, and business all through continues in a very depressed condition. The requirements which consumers have to cover are apparently extremely small, and they are altogether indifferent about buying. Where business is to be done, it is only at the lowest possible prices, and makers have either gradually to come down to the minimum rates, or allow the few orders that are being given out to pass them. Lancashire makers of pig-iron, who for some time past have been undersold by district brands, have had to give way a little on their quoted rates, and 41s. to 42s., less 2½ delivered, equal to Manchester, now represents the average price at which both local and district brands can be bought, although there are some makers who are not disposed to come quite so low as this. Business in the manufactured iron trade continues very slow, and, although there is no actual quotable change in prices, there is a want of firmness when anything like good speculations are to be got; and from the better qualities of Lancashire and North Staffordshire bars delivered here 57. 12s. 6d. per ton is taken readily with some of the local brands to be got at a trifle less.

The engineering branches of trade are still kept tolerably well employed, and locomotive builders have a considerable weight of work in hand which will keep the leading firms busy for some time forward. Generally, however, there is a continued slackening off in the weight of new work given out, but where complaints are made they are chiefly as to the lowness of prices at which orders have to be taken.

This month's report of the Amalgamated Society of Engineers shows a slight increase in the number of unemployed members throughout the country, and there are about 4 per cent. on the books in receipt of out-of-work support. In the Lancashire district, however, and especially in Manchester and Salford, employment continues very steady, and there is a slight decrease in the number of unemployed, 3½ per cent. being the full average of the members on the books in receipt of donation benefit. The secretary of the Iron Founders' Society reports a moderate decrease in the number of unemployed members, but the reports as to the state of trade are not satisfactory, Manchester, Oldham, and Halifax being the only important centres returned as good.

TRADE IN SOUTH WALES.

Aug. 14.—The shipments of coal in July at the South Wales ports were as follows:—Cardiff, 639,460 tons foreign and 91,546 coastwise, with 10,069 tons patent fuel; Newport, 145,811 tons foreign and 77,484 coastwise; Swansea, 71,862 tons foreign and 62,518 coastwise, with 34,310 tons patent fuel. The amount sent away last week was low, owing to the Bank holiday, Cardiff exhibiting a total of 106,773 tons; Newport, 30,842 tons foreign and 19,035 coastwise; Swansea, 18,345 tons foreign, and about 15,000 coastwise.

The Forest of Dean Coal Trade is a little better. The amount of iron sent away from Newport in the month of July was 13,798 tons; Cardiff, 10,019 tons. Last week Cardiff received 5532 tons of iron ore from Bilbao, and 1068 from other places; Newport, 6340 tons from Bilbao, and 4800 tons from other places. The large stocks which were on hand some time ago are now being gradually lowered, and prices may become firmer.

The strike at the Llynvi Ironworks is at an end, the men having agreed to work one turn per month for nothing instead of submitting to a reduction of 5 per cent., with the understanding that the company will return to the old state of things if trade improves.

The Britonferry Tinworks were re-opened this week after a long stoppage. Trade is good, IC cokes fetching from 15s. 6d. to 16s. per box.

ABERCARN.—On Saturday last (Aug. 9) the Newport Abercarn Coal Company gave their employees a treat in a large field near their Celynen Colliery. A fete on a large scale was organised, consisting of athletic sports and sundry entertainments. Luncheon was provided for the workmen and a tea for their wives and sweethearts. "Punch and Judy," acrobatic performances, and a "nigger" singing formed a part of the programme. The Celynen Philharmonic Society's reed band, conducted by Mr. A. N. Rogers, performed a lengthy programme of operatic selections and dance music. Mr. Thomas Beynon, the managing director of the company, accompanied by Mrs. and the Misses Beynon, Capt. George Homfray, and Mrs. Homfray were present during the day, joining heartily in the different pastimes. Amongst the visitors also were Messrs. T. G. Tucker (Bath), J. Waddle (Llanelli), E. R. Thomas, R. H. Richards, H. Lishman, C. Bailey, J. Van Tromp, and Masters Percival and Alfred Green, Mr. J. T. Green, and Mr. T. Thomas, of Cardiff, the company's manager and engineer, and Messrs. D. Bowen, cashier, J. W. Green, surveyor, William Jones, underviewer, William James, mechanic, R. R. Lishman, and J. Mackinnon, the secretary to Sports Committee, took an active part in the day's proceedings. At the close of the day Mr. Beynon addressed those present, stating how pleased he was to meet them, and with Mrs. Beynon and his family to spend a day amongst them, and to see all enjoy themselves so well and behaving so admirably. Mrs. Beynon having distributed the sport prizes, the fete was wound up by a display of fireworks. All thoroughly enjoyed themselves, and expressed their thanks by hearty cheers for Mr. and Mrs. Beynon, the board of directors, and the company.

TRADE OF THE TYNE AND WEAR.

Aug. 14.—The prospect for the Coal Trade still continues good. Best steam is in good demand, and shipments at Blyth and at the Tyne Docks and other shipping places continue large. There is, therefore, a prospect of full employment at the Northumberland collieries for some time to come. The Durham collieries are also, on the whole, well employed. The shipments at Tyne Dock and at the various stations on the Tyne are on a good scale, while at Sunderland Docks they are doing a good average trade, and at Seaham the demand for house and other coal continues extremely good. The gas coal trade improves but slowly, but the late advance in the price of house coal is maintained. The late returns of coal statistics in Brown's Export List show that the exports for last month compare favourably with those for the corresponding period last year. The exports of coke have also increased, so that the dull state of the coke trade is due to the deficient demands at the local ironworks and on the West Coast.

The rating of machinery on these rivers still occupies the attention of the manufacturers interested, and a considerable number of them have combined together for the purpose of resisting the action of the Tynemouth Union, who insist on rating the machinery in the usual way adopted in the district. It is expected that this important question will be contested in the Law Courts shortly.

The Tees salt beds continue to be worked with fair success by Messrs. Bell Brothers by the bore-hole system lately adopted, and other workings are now projected. Mr. Vivian, of Whitehaven, is now putting down a bore for the great Newcastle Chemical Company. A new company has just been formed who intend to bore for the salt bed at Havestart Hill, on the north side of the Tees. Arrangements have been made with Mr. Vivian to put down the holes for this company also. The working of the salt by this ingenious method, as observed above, has no doubt been fairly successful, yet we think that there are some drawbacks connected with it, and it may also be doubted whether those bore-holes will continue to produce salt in sufficient quantity for any great length of time. Even at a new hole we have observed that the pumps can only be worked at a certain speed to ensure that the water is sufficiently charged with salt; if that speed is much exceeded water is got only slightly charged with salt, and of course of little value, and it is quite possible to work the pumps at a speed which will produce water nearly pure. As the salt bed becomes exhausted in the vicinity of the bore-hole probably this difficulty will be more felt. If a shaft were sunk and the salt mined in the ordinary manner a large quantity could be worked, and a permanent mine would be established free from these objections. The depth from the surface to the salt bed is not excessive, only a little over 200 fms., and a good winding-engine would raise a large quantity of mineral from that depth per day.

At the famous Green Hurth Mine it was lately feared that the fine vein of lead had been interfered with by the occurrence of a hostile bed of rock, "the whin sill," the vein had, indeed, almost disappeared, but it has again been found taking its natural course nearly in a vertical direction, and worth 3 tons to the fathom, and it is hoped that it will prove richer in depth.

The Iron Trade has continued in a dull state during the week, although the increase of stocks has not been so serious as was at one time anticipated. The increase in stocks was partly caused by reduced shipments. The feeling in the iron market is, of course, weak, but there is no change in prices. Makers still adhere to 37s. for No. 3, and No. 4 forge 34s. 9d. to 35s. The condition of the manufactured iron trade has not improved, and there is very little appearance of any improvement at present. The demand continues very limited, especially for shipbuilding material, which is the chief production, and manufacturers are obliged to accept easier terms with such a dearth of orders. Ship-plates 4½. 15s. to 5½.; angles, 4½. 12s. 6d.; bars, 5½. 2s. 6d. There is no improvement in the steel trade, and the extensive mills of Bolckow, Vaughan, and Co., at Eton, are at present idle. Steel rails are very fairly kept up at the combination price of about 4½. 12s. 6d. The shipments of pig-iron for the month ending Thursday last was 16,691 tons. The coal and coke trades are rather flat at Middlesbrough, except in special departments. House coal is rather better for shipment.

The demand for vessels and consequent rate of freights fluctuates to some extent. On the whole, there has been an improvement of late; but there is still insufficient trade to bring all the vessels into work, and a considerable number are laid up for an indefinite period. Some of the shipbuilders on the Wear have received orders for new vessels during the past week, and it is also stated that the Jarrow Company on the Tyne have received orders for gunboats of large size.

Great preparations are now making for the reception of the Prince of Wales in Newcastle and the district next week. The most imposing part of the ceremony will no doubt be the procession of steamers down the Tyne to the new dock to be opened, and from thence to the piers at the mouth of the river. A fine steamer of peculiar construction has been secured for the service of the Royal party—the large American river passenger steamer, Pau E Amazonas, built by Messrs. Leslie of Hebburn. She is one of four steel vessels built by the

firm to ply on the Amazon river. The vessel is fitted with a pair of compound diagonal paddle-wheel engines of 600-horse power by Messrs. Black, Hawthorn, and Co., Gateshead. The vessel stands high out of the water, has three decks, and is quite open at the sides. The vessel is 185 ft. in length, has a beam of 47 ft., and a depth of only 8 ft. This steamer is intended to carry 800 passengers. The scene at Rothbury will also be very fine in its way. The Prince will be received by a guard of honour composed of local volunteers. A large number of visitors will be present in addition to the native population, and the shepherds and their wives and daughters from the whole of the Cheviot range of hills have been invited, and will be entertained by Mr. Donken. It is expected that about 300 of these stalwart sons and daughters of the soil will be present. An immense bonfire is prepared to be lighted on the highest point of the Simonside Hills. It is not probable that the Prince will have any time to devote to an inspection of any of the great ironworks or collieries in the district, otherwise he would doubtless be interested in seeing these works. Some of the collieries have been inspected by distinguished scientific men at various times, but so far as we are aware only one royal personage has done this—the Emperor of Russia, who visited the Wallsend Colliery in 1832. He was conducted to the shaft by Mr. Buddle, the famous mining engineer, who wished the Emperor to descend into the workings; but, as it unfortunately happened to be an upcast shaft, which vomited forth dense volumes of smoke, the Emperor beat a hasty retreat, refusing to descend, and exclaimed—"My God, it is the mouth of Hell." At the present time there is nothing to deter the most timid stranger from entering one of our coal mines, and the means of passing down and up the shafts is safe, rapid, and pleasant.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Aug. 14.—The Iron Trade of both Derbyshire and the West Riding has undergone but little change of late, and it is probably as good in those districts as it is in any part of the country. There has of late been the usual output of pig at the Staveley, Stanton, Sheepbridge, Clay Cross, and other works in Derbyshire, although not so much has gone into other districts, and it is, therefore, satisfactory to find that the local consumption is as heavy as it is, for it speaks well for the state of the finished iron trade. In rolled iron the production is not so large as it was at one time, but there is every appearance that it is fast getting up to its old standard, and the reputation of the Butterley Company in particular will be fully sustained. The Sheepbridge Company are able to turn out 200 tons of merchant iron weekly from their own pig, although it is not likely in the present state of things they are doing so. The large foundries connected with the blast-furnaces have been doing very fairly for some time past in heavy castings, for which several of them are noted. The pipes made at Staveley and some other foundries in Derbyshire are well known all over the kingdom, and the demand for them has kept up very well. The large foundry of Oliver and Co., at Chesterfield, has also obtained a reputation second to none at home and abroad for nearly all kinds of mining plant, and have recently turned out some very heavy castings in connection with powerful fly-wheels. In light and ornamental foundry material only a moderate business has ruled of late, but the wagon works appear to be doing fairly well all round.

Very little that is new can be said about the Sheffield trades, for they have undergone but little change for some time past. Cutlery and hardware have shown to disadvantage for some months past, more especially with respect to American and some of our own colonies. Season specialties, such as lawn mowers, garden and horticultural tools, scythes, rakes, &c., are now all but over, so far as the manufacturers are concerned; but makers of sheep-shears are fairly off for orders. In chaff-cutters and similar light appliances Sheffield has done well, having obtained a good many prizes for such products; Messrs. Crowley and Co. deservedly standing at the head of the list. Their lawn edge-clippers are undoubtedly the most complete and efficient implement for the purpose yet turned out, and is besides a model of simplicity and cheapness. In both Bessemer and crucible steel the output has kept up to the average, a good deal of the former being for heavy castings for marine engines and propeller blades, as well as for mining and other wheels. Cammell's and Brown's are still doing well in armour-plates, having contracts in hand for the American, Swedish, and other Governments. In other kinds of plates the business doing is of a moderate character, but a good demand continues at some places for hoop iron for exportation. Of late there has been some improvement as regards Bessemer rails, and there is also a very fair output of crank-axes, tyres, springs, and points as well. Wire does not appear to be in such good request as it was, and the edge tool trade is still somewhat moderate. At the collieries throughout the Midland field, from Nottingham to Leeds, short time is still the rule; but of late some little improvement has taken place even in house coal. This is shown by the traffic with the Metropolis from the inland districts, which may be taken as a fair guide of what is doing throughout the country. So far, therefore, as the London trade is concerned, the Derbyshire and Nottinghamshire colliery owners have had the best of it.

TESTING BOILER PLATES.

Quite a large amount of valuable information was elicited in the discussion at the recent meeting of the American Institute of Mining Engineers of Mr. Salom's paper "On Physical and Chemical Tests for Boiler and Ship-plates." Dr. RAYMOND submitted a paper on the subject of tests, by Mr. D. Kirkaldy, which contained a statement of the method pursued by him at his celebrated laboratory, as well as a general statement of his views as to the objects to be sought in testing, and the best methods to be used to attain these objects. Mr. Kirkaldy objects vigorously to the use of the awkward English ton of 2240 lbs. in reports of tests, and recommends that all statements be given in pounds and square inches.

Regarding the paper as a very important one Mr. Kent remarks that in studying it he had selected such tests as had the chemical analyses, averaging them when two or more tests were given of the same piece, and had constructed new tables showing the effect of carbon and other ingredients upon the steel. From this it appeared that from 10 carbon, with a tensile strength of 53,000 lbs., the strength increased up to 15 carbon with 68,000 lbs., then decreased to 18 carbon with 65,950, and increased to 73,300 at 20 carbon. His view was that strength did not seem to depend upon these materials, at least within the limits that they were found in the steel discussed in the paper. As a steel manufacturer he found that steel was preferred by consumers which was low in phosphorus, because it gave the best results in use, and, after all, the formal test was service. The amount of phosphorus in steel was also a commercial question, as the lower the steel was in phosphorus the higher the cost. Mr. Kent stated that he, as a manufacturer, would prefer 15 to 18 per cent. carbon for steel boiler plates, provided the steel was low in phosphorus. When working 10 per cent. carbon there was a danger of making 7 per cent. carbon, which was too low and must go to the scrap pile, but when making 18 per cent. carbon, if 15 per cent. should be made it can be put to other uses. One source of trouble in making tests for scientific purposes is that the pieces are not all in the same condition.

The chemical test was declared to be insufficient by Mr. Durfee, because there were frequent defects in steel that could not be detected by chemical analysis. Put a 14-in. ingot into a very hot furnace; frequently a peculiar sound is heard, like the striking together of iron bars. This indicates a rupture in the interior of the ingot that may or may not show in the bar. No matter how much carbon there is in that bar or how many chemical tests are made or what they show, that bar is bad. Mr. Durfee also criticised the practice of testing long pieces, especially for structural purposes, without supporting the centre. As they are put into the machine there is a tendency to break from their own weight. In replying, Mr. Salom reasserted the claim of his original paper—that it is possible to produce good and bad steel by chemical specifications. It will not be possible to go far wrong if in asking for best boiler-plate the specification be only a chemical one. He had analysed all the first

boiler-plates, and found them remarkably uniform, low in carbon, rarely over 10 or 12, and very low in phosphorus. With regard to the effect of size of test pieces in varying the result of the tensile strength of the pieces tried, he gave a table showing the whilst a 1-in. piece indicated 63,000 lbs. tensile strength and 41 per cent. elongation, a 5-in. piece indicated 56,300 lbs. tensile strength and 32½ elongation, whilst a 10-in. piece showed only 54,000 tensile strength and 27 per cent. elongation.

MINE VENTILATION.

The science of ventilation, although of paramount importance to the practical miner, is usually regarded by him as one of the most difficult subjects of study; he must either be content with the merest outline, or must undertake a long course of preliminary training in order to be able to comprehend the more advanced treatises. Something between the merely elementary outline and the exhaustive dissertation on the subject is furnished by the "Treatise on Practical and Theoretical Mine Ventilation," by Mr. EUGENE WILSON, instructor in Drifton (Pennsylvania) Industrial School, Miners and Mechanics—New York: John Wiley and Sons, London: Trübner and Co., Ludgate-hill—who has, to use his own words, "endeavoured to deal with ventilation in such a manner that no one with a fair knowledge of the English language and of arithmetic need despair of thoroughly mastering it. Knowing that the mine possesses but a comparatively small stock of words, and is not adept in algebraic formulas, the writer has taken a different position from the standard works on the subject, endeavouring to get away with abstruse language, and such highly mathematical formulas as are only calculated for well-educated engineers. In order that the text may be more readily followed, each article is illustrated by an example. There are many practical hints given for engineers, who, owing to lack of time have been unable to keep well informed on this subject as they may have wished to do, many useful memoranda, and tables for saving time and labour when dealing with questions relating to ventilation will be found in this little volume.

The subject is systematically treated in 11 chapters; the student being by this means led from the first notions of the nature of gases to a knowledge of the most approved forms of mechanical ventilators, and the mode of treating asphyxiated persons. The description of the atmospheres of the principal gases met with in mines and the laws which regulate the expansion of gases and falling bodies are given in the first chapter, and there is then a chapter explaining natural ventilation, head of air, and effects of variations of temperature. Safety-lamps are treated of in the third chapter, whilst in subsequent chapters the physical properties of air in motion, the laws of pressure and friction of air in mines, the laws regulating the quantity of air flowing through mines, the ventilation of shafts, pits and drifts, splitting air, quantity of air necessary for a mine, air, and the history of mechanical ventilators, and the comparative economy of furnace and fan ventilation are in turn dealt with. The book is ably and carefully written, and will be of almost inestimable value to miners preparing to pass the examinations for certificates of managers.

FOREIGN MINES.

RUBY AND DUNDERBERG CONSOLIDATED.—July 29: Dunderberg There is no special change to report; 17 tributaries at work; 17 tons ore shipped during the week.—Home Ticket: The bottom drift has been advanced 3 ft. during the week, the ventilation being bad, which accounts for the slow progress. We expect to make connection in a few days. Two contractors at work.—Lord Byron: The tunnel has been advanced 11 ft. during the week, total, 39 ft. from No. 2 winze. The ore in No. 2 cave, both in the east and west branches thereof, is very low grade at present. The greater portion of the waste material has been hoisted out of No. 1 cave. The bottom has been reached perpendicularly. There is still considerable waste in the north end, which is the deepest point. There is ore exposed in the bottom, but I cannot give you an idea as to the quantity yet; the quality seems to be fair grade. There are 17 tributaries, four contractors, and four day-pay men at work; 13 tons ore shipped during the week.

—Telegram, Aug. 12: 22 tons of ore shipped.

VICTORIA (LONDON).—June 28: Total quantity crushed for the month ending June 21, 2314 tons. Total gold obtained 356 ozs. 16 dwts. 12 grs.; average per ton 3 dwts. 20 grs. silver 80 ozs. 5 dwts. 12 grs.; average, 1.20. Receipts, 9954. Os. 9d.; four weeks' mine cost, 11514. 18s. 9d.; loss, 1554. 18s.

ST. JOHN DEL REY MINING COMPANY (Limited).—Adviser received August 13, 1884, ex Neva (s.), dated Morro Velho, July 19:—

GENERAL OPERATIONS.

GOLD PRODUCE FOR THE MONTH OF JUNE, 1884.—The total quantity of gold obtained in this period amounts to 29,107.3 oits., equal to 2318.9466 ozs. Troy. It has been derived as follows:—			
Morro Velho stamps	16,000	from 4296 =	3750
Praia ditto	1,968.3	"	569 = 3435
	17,968.3	"	4315 = 3715
Re-treatment, &c.	2,140	"	" = 440
Total	20,107.3	"	4315 = 4150

This produce is greater than for the previous month by 3750 oits., and there is an increase in the yield of 1141 oits. per ton. With this improvement a profit has been made of 10334. 14s. 5d.

COST AND PROFIT.

Produce		29,107.3 oits.	
Less loss in melting	129.2		
	19,978.1 oits., at 7s. 9d. per oit.	£7741 10 3	
Cost		6707 15 10	
Profit for the month		£1033 14 5	

MINES.—Mineral raised from the mine 4928 tons. Mineral quarried per borer per diem 2.59 " Average attendance of borers daily 77.57

SUMP.—This has been sunk during the month 4 ft. 3 in. vertically, and the sinking lift lowered 21 ft. The rate of sinking is less than it should have been owing to having to strip down the south wall before timber could be placed. The condition of the walls is such that for the proper security of the ground it is necessary to timber close down as the shaft is sunk. The shaft is gradually being contracted on the north side so as to leave as much of the killas as possible.

Nos. 1 AND 2 STOPES.—Very little has been done here in advancing these, the force usually employed in this part of the mine having been employed in taking down the mineral on the south wall of both. This is entirely free from killas.

No. 3 STOPES.—This is at present in poor ore; the section of good mineral ground should, however, soon be met with.

NORTH-WESTERN BRANCH.—Good progress has been made in proving this; and although the assays from the mine samples are not high, the mineral is to all appearances good, and highly charged with arsenical pyrites. The cutting already made west of the slide is about 40 ft. long, and of the same height.

EASTERN RESERVE.—Work here has been carried on as usual, and a pillar of ground is being left in Section 217, to secure the ground. No alteration in the report in the lode, which is 11 to 12 ft. wide, and mineralised throughout.

GOLD EXTRACTED TO DATE.—The produce for the first division of July, a period of 12 days, amounts to 6585.3 oits., equal to 759.177 ozs. Troy. It has been derived as follows:—

Morro Velho stamps			
5859.5	from 1819 =	3170	
Re-treatment	725.8	"	" = 392
Total	6585.3	"	1819 = 3563

The produce is low, owing to the sand from the Praia stamps not having been treated, as the stock of quicksilver was so low that it could not be treated. This will, however, be returned in the produce for the month.

MINES.—Return of duty for 14 working days:—

Mineral raised from the mine		2990 tons	
Mineral quarried per borer per diem	2.59		
Average attendance of borers daily	78.43		
Average attendance of natives daily	291.78		

GENERAL REMARKS.—The new hauling-wheel is now working well, and is a good substantial piece of work. At present it is being used to raise and lower timber, and clear the mine of old iron and ends of timber, &c. Water kept in both mines. The low output for the month is chiefly owing to the number of Saints' days during the month, on which and the following days it is difficult to get free people to work.

CUTADA.

COST AND PROFIT.		2311 oits., at 8s. 1d. per oit.	
Produce	£930 1 6		
Cost on working account	£790 1 6		
Ditto capital—Exploration	£98 13 3		
Rego	52 14 11 = 151 13 2 =	931 14 8	
Profit for the month		£2 5 11	

TELEGRAMS RECEIVED.—On July 21, dated Rio 21:—Produce 12 days, first division of July, 6500 oits.; yield 3.5 oits. per ton. Profit for the month of June, 10024.

On July 29, dated Rio 29:—Produce 9 days, second division of July, 6000 oits.; yield 3.7 oits. per ton.

On Aug. 11, dated Rio 11:—Produce, month of July, 15,000 oits.; yield 3.6 oits. per ton.—Quilaba: 1750 tons stamped; yield 1.4 oit. per ton.

Mr. Arthur Cooper, the official liquidator of the Great Southern Mysore Gold Mining Company, has, by direction of Mr. Justice Chitty, given notice that he is prepared to pay the debts of this company in full.

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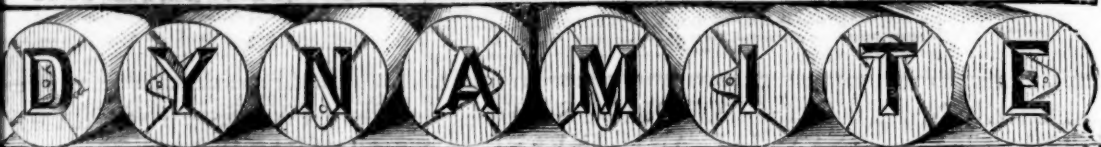
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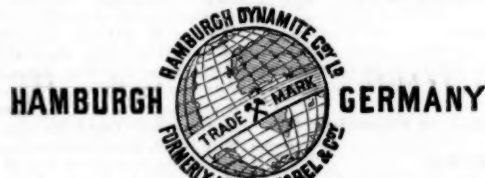
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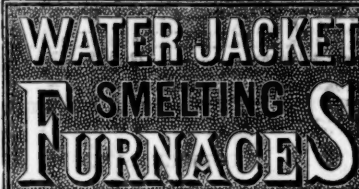
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60000	Owen Veau & Tregur, * t, t, Marazion.....	1 0 0	0
45000	Parys Corporation, * c, Anglesea.....	1 0 0	0
7500	Pedrahyt Bridge, i, Yorkshire.....	1 0 0	0
6000	Pedin-an-drae, t, Redruth.....	4 10 0	0
6000	Pennant, i, bar, North Wales*.....	5 0 0	0
20000	Pennegarig, i, Carmarthenshire.....	1 0 0	0
15000	Pen-yr-Osneid, * i, Flintshire.....	1 0 0	0
15000	Perran Consols, * s, i.....	1 0 0	0
2000	Perran, * t, St. Agnes.....	0 2 6	0
10000	Poberro, t, St. Agnes.....	0 2 0	0
6000	Policrobo, t, Cornwall.....	1 12 0	0
4516	Polroze, t, Cornwall.....	0 15 0	0
10000	Port Nigelsyn, * s, i, Carnar. (4000c.).....	1 0 0	0
13000	Pr. Patrick, * s, i, (als, 12000 p. 10 p.).....	1 0 0	0
12000	Prince of Wales, * c, t, Calstock.....	1 10 0	0
36000	Russell United, * c, Tavistock.....	0 19 0	0
30000	River Hill, * c, Callington.....	1 0 0	0
50000	Sinclair, * i, bl, Whitford.....	1 0 0	0
40000	Sortridge, * c, Horrabridge.....	1 0 0	0
50300	South Caradon, * c, St. Cleer.....	0 15 0	0
6000	South Carbis, t, c, Redruth.....	0 10 0	0
42000	So. Devon Unit, * c, Buckfastleigh.....	1 0 0	0
5000	South Dolcoath, c, t, Illogan.....	0 19 0	0
6000	South Killy, t, St. Agnes.....	0 10 0	0
30000	South Penstruthal, * c, Gwennap.....	3 18 6	0
30000	So. Phoenix & Carnarvon, * c, i, Llanrh.	5 11 0	0
6000	South Polcarne, t, c, Camborne.....	5 11 0	0
2043	South Wheal Crofty, c, Illogan.....	7 4 6	0
6000	South Wheal Frances, t, Illogan.....	9 19 4	0
30000	Standard, * t, bl, Llanrwst.....	1 0 0	0
4000	Tarnar, * s, i, Beaulston.....	1 0 0	0
12000	Trebartha Lomarne, t, Northill.....	0 6 3	0
6000	Tregombo, t, c, Cornwall.....	4 0 0	0
50000	Tregontres and Old Polgooth Con.....	1 0 0	0
100000	Trevaun, * t, c, Gwennap.....	1 0 0	0
8000	Trevaunance, t, St. Agnes.....	0 8 0	0
1000	Vaughan, * t, Cardiganshire.....	10 0 0	0
50000	Weardale, * i, Northumberland. (41 share).....	1 5 0	0
12000	West Assington, i, Carnarvon.....	1 0 0	0
12000	West Caradon, * c, St. Cleer.....	0 9 0	0
30000	West Cornwall, * t, Cornwall.....	1 0 0	0
3000	W. Craven Moor, t, Pateley Bridge*.....	10 0 0	0
12000	West Crebor, c, Tavistock.....	0 11 6	0
10240	West Devon Consols, c, Calstock.....	1 2 0	0
10000	West Dolgolphin, t, c, Breage.....	1 3 6	0
12000	West Gonsal, t, c, St. Cleer.....	0 1 0	0
20000	West Lisburne, * t, Cardigan.....	1 18 0	0
3000	West Mary Ann, i, Menheniot.....	1 18 0	0
20000	W. Pateley Bridge, i, Yorkshire.....	1 0 0	0
12000	West Phoenix, t, Lunkinhorne.....	1 5 0	0
6000	West Polbreen, t, c, St. Agnes.....	0 11 0	0
5190	West Poldies, St. Day.....	10 7 6	0
6141	West Wheal Frances, t, Illogan.....	14 13 0	0
3000	West Wheal Favor, t, Redruth.....	4 10 6	0
2400	West Wheal Seton, c, Camborne & S.....	0 9 6	0
6144	Wheal Bassett, c, Illogan.....	9 9 6	0
3000	Wheal Benny, t, c, Luchely.....	5 0 0	0
3000	Wheal Boies, t, Redruth.....	1 3 6	0
50000	Wheal Cattle, * c, t, St. Just.....	1 0 0	0
12000	Wheal Coates, t, St. Agnes.....	0 12 6	0
2585	W. Comf., & No. Pres. t, c, Gwennap.....	2 2 0	0
50000	Wheal Elizabeth, * s, i, Cornwall.....	1 0 0	0
2200	Wheal Loe, t, St. Agnes.....	3 6 0	0
12000	Wheal Jewell, t, St. Agnes.....	0 0 0	0
25000	Wh. Honey and Trelawny, * s, Liske.....	2 0 0	0
12000	Wheal Lusk, t, Callington.....	0 3 0	0
2000	Wheal Owles, t, St. Just.....	7 3 0	0
30000	Wh. Silver & Lanteglos, * s, i, Camelf.	1 0 0	0
6000	Wheal Sisters, t, Lelant.....	4 2 6	0
4096	Wheal Uny, t, c, Redruth.....	19 13 6	0
21865	Wye Valley, i, Montgomery.*.....	1 0 0	0
60000	Yeoland Consols, * t, Devonshire.....	0 12 6	0
4000	Ystwith, * i, Cardigan.....	1 0 0	0

bl, blende; c, copper; g, gold; i, lead; s, silver; sl, s-l, silver-lead; t, tin; z, zinc; i, iron; a, arsenic. d, d. Limited Liability Companies; † quoted on the Stock Exchange. I have paid dividends

GAS COMPANIES

Issue, Shares.		Pd.
50000	20. ... Bahia [L]	100
510000	5 ... Bombay [L]	100
100000	5 ... Ditto, New [L]	100
100000	5Stk ... Brentford Consolidated	100
140000	20 ... British Gaslight [L]	100
50000	5Stk ... Commercial Union	100
200000	20 ... Continental Union [L] Orig	100
200000	20 ... Do. do. New, 1869, 1872	100
100000	20 ... Do. do. 7 per cent. Preference	100
254000	10 ... European [L]	100
948500	5Stk ... Gaslight and Coke, A. Ord.	100
944200	20 ... Do. do. ... Stock	100
50000	10 ... Hong Kong and China	100
2800000	5Stk ... Imperial Continental	100
120000	5 ... Malta & Mediterranean [L]	100
1000000	5 ... Messrs. of Melbourne & p.c. Deb.	100
250000	20 ... Monte Video [L]	100
100000	5 ... Ottoman [L]	100
500000	5 ... Oriental	100
275000	20 ... Rio de Janeiro [L]	100
500000	5Stk ... South Metropolitan	100
900000	5Stk ... Ditto, ditto. B	100

BANKS

TRAMWAYS.		P.
Issue, Shares,		
40000	5	Buenos-Argetine [L]
10000	10	Barcelona [L]
7140	10	Bright Street Tramways
3050	10	Birkenhead, Ordinance
30000	40	Ditto, 6 per cent. Preference
50000	2	Brasilian Street Railways
3290	10	Bristol [L]
23000	10	Bordeaux Tram & Omnibus [L]
25050	10	Calcutta [L]
3200	10	Chester [L]
24000	10	Dublin
14500	10	Edinburgh
36000	10	Glasgow Tramway & Omn. [L]
10000	10	Hughes Loco. and Tram. works
7500	10	Hull Street Tramways
7500	10	Imperial [L]
34000	10	Liverpool Unit. Tram & Om. [L]
25000	10	London [L]
15000	10	London Street Tramways
60000	10	North Metropolitan
8000	10	Nottingham and District [L]
15947	10	Provincial [L]
6000	10	Sheffield
5000	10	Southampton
8000	10	Sunderland [L]
10000	10	Swansea [L]
12000	10	Tramways of France [L]
16500	10	Tramways of Germany
20000	8	Tramways and Light R.orks [L]
40000	10	Tramways Union [L]
35000	10	Yale of Olve

MISCELLANEOUS

Shares.	Company.	Perd.
10	Anglo-American Brush	8 00
10	Ditto do.	10 00
50	Lon. & Glas. Engin. & Iron Ship 25	3 00
1	Maxim-Weston Electric	1 00
10	Nevada Land and Catt e	2 10
10	Nobel's Explosives [L]	10 00
6	Swan United Electric	3 00
12	Tel. Con. & Maintenance [L] ..	12 00
10	United Ashbores	10 00
10	Young's Paraffin Light & M.O ..	8 50

LONDON: Printed by RICHARD MIDDLETON, at the
 of HENRY ENGLISH (the proprietor), at the
 26, FLEET STREET, E.C., where all orders
 may be sent.

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